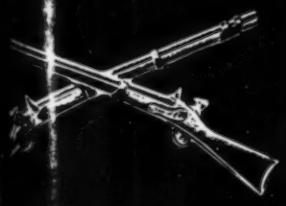

INFANTRY

The Professional Journal for Infantrymen

OCT-NOV 1959

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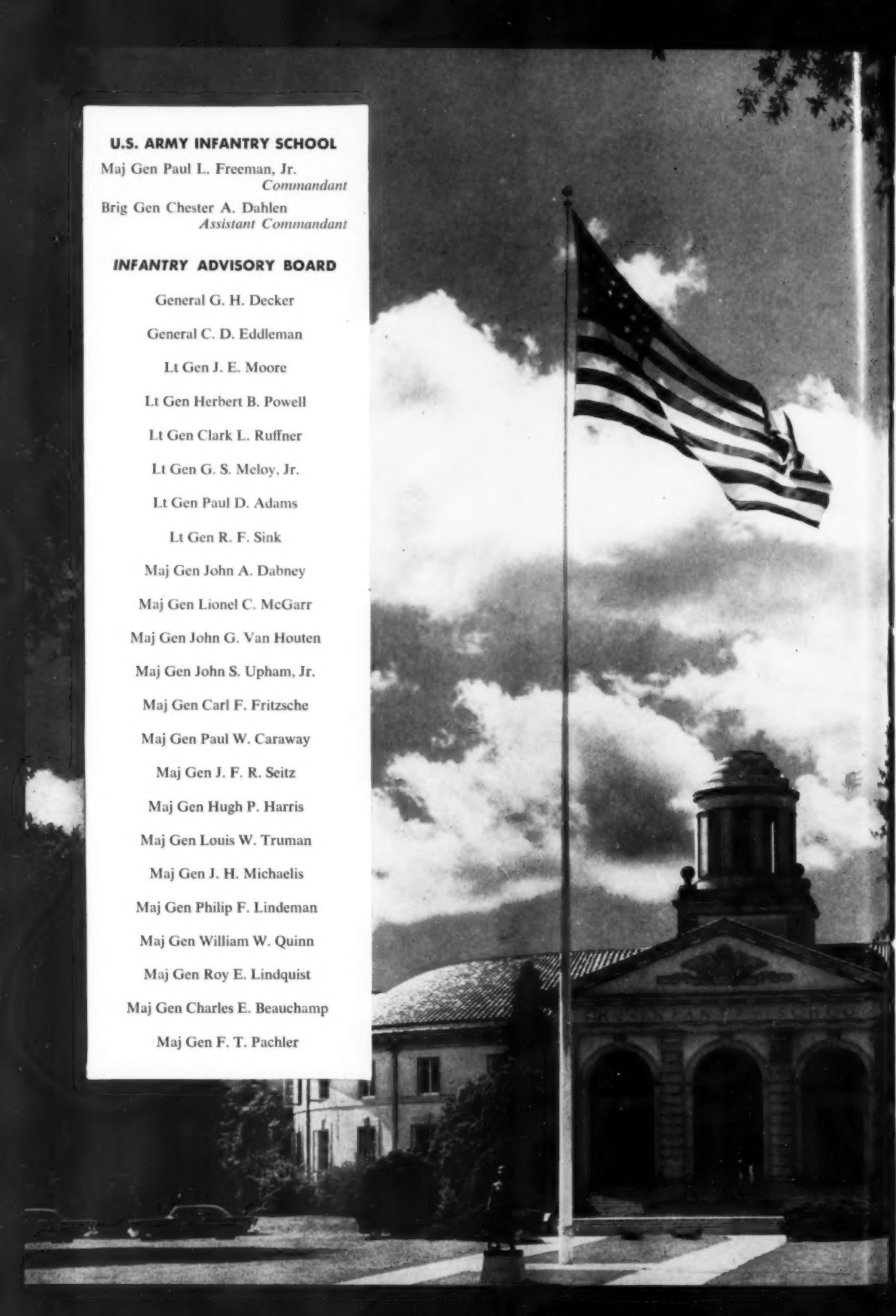

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Dear Infantrymen:

Our belief in the need for critical evaluation of our future requirements has led to our asking the distinguished Infantrymen whose names appear on the opposite page to act as an advisory board for *Infantry*. They will from time to time recommend to us, and therefore to you, matters that are appropriate for all Infantrymen to study and consider—matters of potential importance to the Infantry and, of course, to the Army and to our national military posture. Their advice on a variety of vital issues will contribute to the kind of progressive climate upon which the effectiveness of the combined arms team depends. We know that we cannot do the job alone. We know the urgent need for all services to work together. We believe that only by such creative unison is victory achieved.

It is our belief at Fort Benning that honest discussion about critical and important problems is the most desirable way to attempt to determine our requirements for the future. Accordingly, our magazine strives to present without bias all aspects of problems, some of which are controversial but all of which are fundamental to Infantrymen world-wide and to the betterment of our Army as a whole.

It is an honor that these busy officers have consented to share a portion of their limited time with us. They have risen to posts of great responsibility because they refuse to be awed by the complexity of the future. I know that they would enjoin each reader to adopt a similar attitude, for only by the moral courage to face the truth can we hope to progress.

Paul L. Freeman Jr.

PAUL L. FREEMAN, JR.
Major General, USA
Commandant

FROM THE COMMANDANT

THE EDITOR SAYS

With this issue, *Infantry* begins bimonthly publication. Coinciding with the thirty-seventh anniversary of the Infantry School's professional journal, this change marks another extension of service to Infantrymen world-wide.

Among the most recent improvements was the adoption of a larger format a year and a half ago, the introduction of a number of new features and the modification of layout to increase attractiveness and readability. More important, however, we have sought to bring you the most accurate and up-to-date information on topics that are necessary to your professional development, and current Infantry thinking on vital issues. We hope that the new *Infantry* logotype, which appears for the first time on this initial bimonthly issue, expresses to all Infantrymen the aggressive, forward-looking spirit of the ground combat soldier—the spirit which we hope to reflect within these pages.

Many of our readers have indicated their preference for a bimonthly publication, regardless of price. It is noteworthy in this regard that, for our permanent subscribers, cost per issue will decrease from $.56 to $.50. This has been made possible by *Infantry's* rising circulation.

Our purpose is to help the professional Infantryman, and those who work with the Infantry. To do this we need *your* help. Firm support—in the form of subscriptions, articles and your letters of suggestion or opinion —is the only means by which we shall be able not only to maintain, but to expand, our services to you.

This issue also marks the establishment of the *Infantry* Advisory Board. The distinguished officers who are members of the Board will provide significant guidance to *Infantry* and the School. By accepting membership they have indicated a deep concern with the continuing development of a sound and progressive Infantry approach to the vital problems which face us today. We want to express to them our gratitude.

Every Infantryman should be equally concerned. If you have an idea that you think will help the Infantry and the Army, write to the Commandant or to the department you believe is concerned. All suggestions from the field receive thoughtful consideration.

And, if you have questions of fact or special problems, send them to *Infantry*. Chances are that someone here at the School has the answer or a solution. Our "Letters to the Editor" column is always open to such queries, and the replies we print may benefit other Infantrymen as well.

LETTERS TO THE EDITOR

Standardization

Sir:

Although standardization is now a matter dealt with at small unit level, I am, however, astonished that nothing, or nearly nothing, has been said on this question in your publication.

In my opinion, the Infantryman should know what is going on in NATO in order to allow all nations to fight more efficiently and to allow unity of procedures in the various integrated staffs.

Standardization applies to equipment as well as to procedures. For instance, your M14 rifle and your M60 machine-gun are built up around a standardized ammunition. When the soldier speaks of the "NATO 7.62mm round," does he know that this same round is used in other countries, and by which countries? This is not only to tell him what other NATO nations are doing, but also to tell him that in an emergency, when he is overseas, he will be able to help the neighbor unit, or be helped by it.

Standardization takes a long time and a lot of paperwork, but it is worthwhile.

J. C. R. ARNAULT
Major
Military Agency for Standardization
NATO

Every effort is made to inform our troops about the nature and purposes of NATO through our Troop Information program. Though Infantry *itself has not carried an article specifically of standardization, it has given full attention to the transition to 7.62mm. We would welcome articles from NATO Infantrymen on standardization and other matters of common interest within the Organization.*—Editor.

Permanent Subscription

Sir:

I wish to change my subscription to "permanent" . . .

. . . I found *Infantry* very useful as an ROTC cadet. I am sure that it will be even more valuable now that I am going on active duty.

WAYNE C. WATKINS
Lt, Infantry
101st Airborne Division
Fort Campbell, Kentucky

As we have many times before, we want to recommend the permanent plan to all our readers. Cancellable at any time, this plan saves you money as it assures you of uninterrupted delivery of your Infantry. *Frankly, we like it, too, because it gives a certain stability to our subscription lists.*—Editor.

Bimonthly

Sir:

I . . . am pleased to hear Infantry will come bimonthly.

It has been a great help to me in preparing classes in our company and in keeping up to date on many changes. Thanks for a wonderful magazine.

GEORGE MAREK
Sfc, National Guard
Merrillan, Wisconsin

This issue of Infantry marks the beginning of our bimonthly service.—Editor.

Weight vs Bulk

Sir:

Weight is called the "nemesis of mobility" ["Weight-Nemesis of Mobility," by Capt Harold J. Meyer, in the July-September issue of Infantry]. But bulk, too, is a barrier to mobility, and specifically to strategic air transportability. Army Aviation is spawning a whole new family of vehicles which are as strategically immobile as armor and heavy support equipment. Continued on page 12

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THE COVER

The missile gunner on this month's cover tracks his SS11 to its target. When fully trained he will take his place alongside other gunners in the battle group's assault weapon platoon and in the Army's expanding missile program.

INFANTRY

The Professional Journal for Infantrymen

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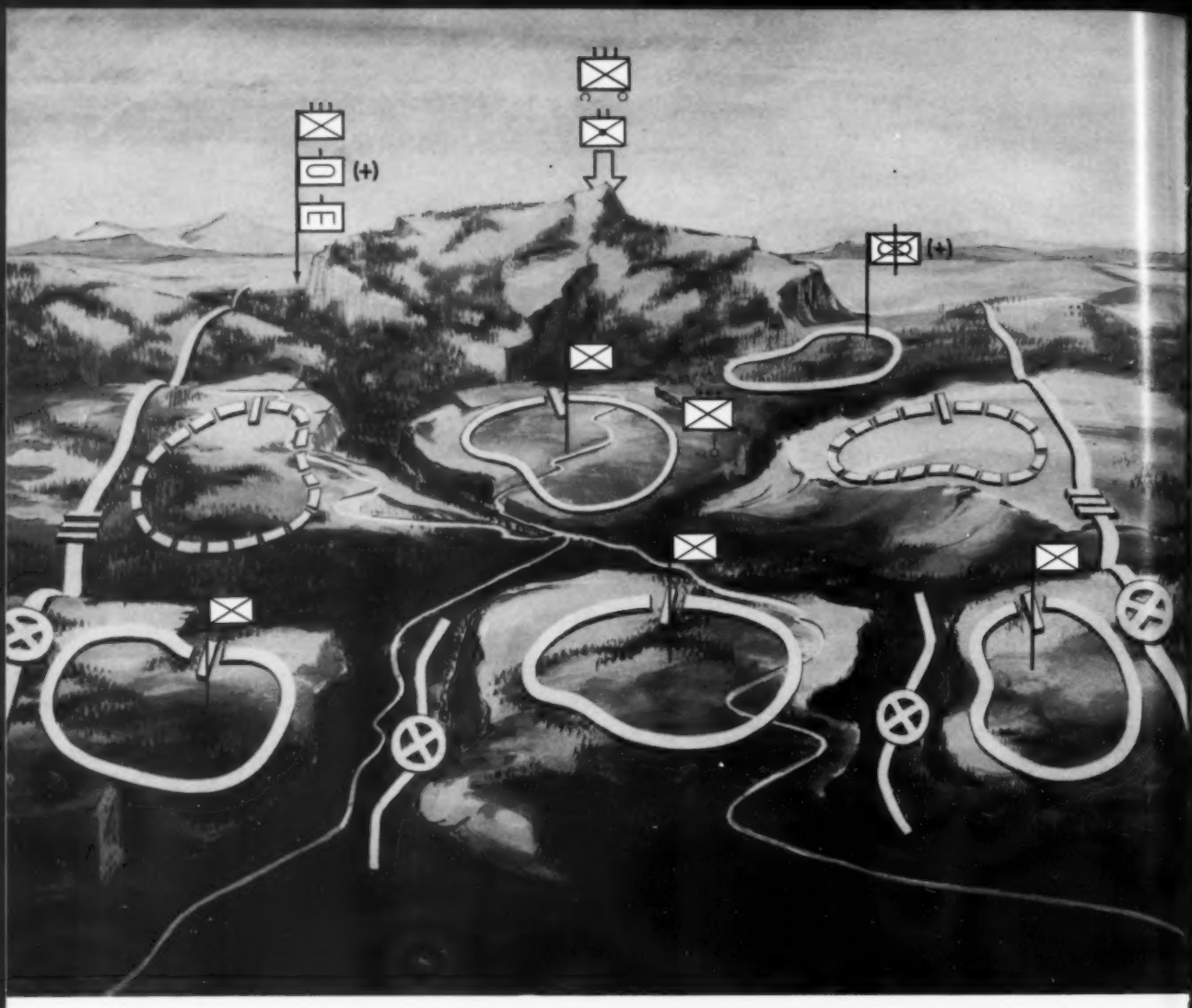


The Infantry Battle Group – in the Defense

by Lt Col Edwin C. Gibson and Maj E. B. Moore, Jr.

BECAUSE of the concrete manner in which units can be placed upon specific terrain in defensive situations, the subject of defense is one of the most popular items for discussion among students of tactics. Almost every thinking soldier seems to have a theory on this subject, especially in these times when no one can accurately predict the effects of a nuclear weapon on a specific position. The question of how much dispersion is necessary is not accurately answerable and, consequently, defensive theories have arranged themselves into three general schools of thought. The first holds that defense must be established using strong points of battle group size, retaining full mutual support between subordinate elements of the battle group. While this or-

A defense which preserves small unit integrity and is based on the ranges of organic and supporting weapons appears to be the most plausible solution for the nuclear battlefield.

ganization appears best suited for defense of specific terrain, it also is most vulnerable to enemy nuclear weapons.

The second school maintains that the battle group must be widely separated, with squads, platoons and companies all disposed in great width and depth. This method of disposition certainly affords passive protection against enemy nuclear weapons, but it is doubtful that units so dispersed can actually defend. In fact, they may be defeated by an enemy who has not been required to mass. Somewhere between these two variants lies the third school of thought, which is essentially a compromise position, but nevertheless one which is plausible and adaptable to varying conditions. This article will discuss only one of the defensive arrangements possible under this theory, which essentially is based on small unit integrity and keyed to the ranges of supporting and organic weapons. By applying this basic theory a number of defensive postures can be evolved which will fit different situations and terrain.

The mission of Infantry in defense remains unchanged. Neither are the fundamentals of defense changed. In the defense we strive for dispersion, flexibility, retention of the initiative and maximum use of offensive action. No longer is Infantry tied to the retention of ground in a static position. Instead, Infantry skillfully uses terrain to help destroy the attacking enemy. The commander must dispose his force in such a manner as to mass the enemy into a lucrative target for the effective employment of massive firepower. At the same time, however, the commander must not dispose his forces in a manner that will provide the enemy an equal opportunity. To ensure flexibility he must disperse both laterally and in depth and have mobility which is at least equal to that of the enemy. To cover the wide areas, there must be overlapping capabilities of surveillance and fire, and the ability to control the actions of subordinates. The commander must be provided, and must provide his subordinate units, with the means to sustain semi-independent operations at least for limited periods.

In organizing for the defense, the battle group commander makes maximum use of the capabilities of units available to him. Since some of these units are new to the battle group, a brief review of their capabilities and employment is in order.

The primary antitank support organic to the battle group comes from the *assault weapon platoon.* The weapons of this platoon, currently SS10 guided missiles, are employed in forward company areas. This allows the range of the missiles to be exploited to the maximum and permits engagement of enemy armor forward of the FEBA. The missiles are usually sited to cover the most likely avenues of armor approach. Mutual support between the squads of the platoon is desirable. However, when the number of tank approaches and the distance to be covered by the platoon does not permit mutual support, the squads may be employed singly.

When tanks are attached to the battle group in defense, the major portion of the tank company should be retained in reserve whenever possible. This action capitalizes on the tank's offensive capabilities and, at the same time, gives the battle group antitank defense in depth. However, tank platoons may be attached to forward rifle companies to thicken the antitank defenses or to cover armor approaches not covered by elements of the assault weapon platoon.

The *reconnaissance platoon* is initially employed under battle group control to maintain contact with security units forward of the battle group sector. Upon withdrawal of

---

Lt Col Edwin C. Gibson completed OCS in 1943 and received a Regular Army commission in 1947. He served in Europe during World War II with the 157th Infantry. After the war, he joined the staff of the Mountain and Winter Warfare School. He graduated from the Advanced Course at USAIS in 1949, and then became an instructor at the Army Arctic Indoctrination School. He completed the Regular Course at USACGSC in 1952. Colonel Gibson served in Korea prior to his present assignment with the Infantry School's Command and Staff Department.

Maj E. B. Moore was graduated from OCS in 1943. In 1950, he received a Regular Army commission. During World War II, he served with the 260th Infantry in Europe. After the war, he was assistant adjutant of the Manhattan District and, later, of the Armed Forces Special Weapons Project. In the Korean War, he was assigned to the 179th Infantry, 45th Division. Major Moore has attended the Associate Advanced and Advanced Courses at the Infantry School, and the Command and General Staff College. He is now studying for the M.A. at Syracuse University.

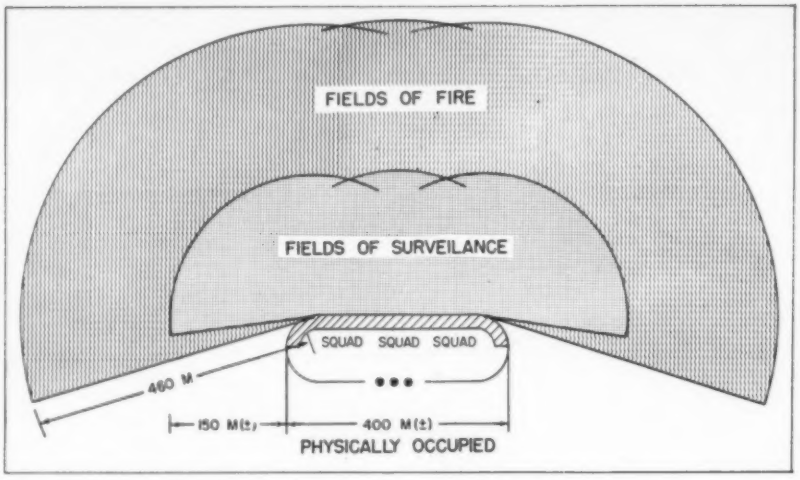


Figure 1. Schematic of the rifle platoon defensive area.

these security elements, the platoon may be utilized in one of several ways: in maintaining contact with flank units, to establish observation posts, as an economy of force element, or to perform security missions in the rear portion of the battle group sector.

The *radar section* can be used in a combination of attached and general support roles, with battle group S2 exercising primary staff supervision over its employment. Normally, the AN/PPS–4 radars will be attached to the forward rifle companies because of their limited range. The medium range AN/TPS–22, operating under battle group control, will be positioned where they can best extend the coverage of the shorter range devices and still provide surveillance in depth in the battle group sector. While the radars can increase the surveillance capability of a unit during periods of darkness or reduced visibility, it must be recognized that their ability to detect and locate enemy activity is dependent upon their siting. Absence of suitable vantage points may seriously impair the usefulness of these devices. Trees, brush, hills and other solid objects will clutter or block the radar signal to such an extent that little useful information can be obtained.

When an engineer company is placed in support of the battle group, the organic *engineer platoon,* in the interest of efficiency, may be directed to accept missions from the supporting engineer unit commander. Engineer units are normally retained under battle group control; however, when the battle group operates over an extended frontage, portions of these units may be attached to company-size task forces.

The *heavy mortar platoon* will normally be employed in general support of the battle group, with its fires and fire direction operations closely tied to those of the direct support artillery battalion. However, the battle group commander may attach the platoon to a task force or otherwise utilize its elements separately if the situation warrants. But irrespective of how the unit is employed, the mortars remain immediately responsive to the needs and desires of the battle group commander. The fire support coordinator, commander of the DS artillery battalion, will plan the fires of the mortar platoon and integrate them into the fire plan.

When the mortar fires are tied in with those of the DS battalion, the mortar and artillery forward observers will call for fire through their respective fire direction centers. When appropriate, the mortar platoon FDC may refer requests from its observers to the direct support battalion FDC and, conversely, the DS battalion FDC may refer requests to the mortar platoon. This procedure enables the forward observers of either the DS battalion or the heavy mortar platoon to adjust both the mortar and artillery fires.

Defensive fires, both nuclear and non-nuclear, are planned to bring the enemy under increasingly heavy attack as he approaches the battle area. Fires are also planned within the battle area to limit penetrations, to support counterattacks, and to complete the destruction of the enemy. Nuclear and non-nuclear fires complement and supplement each other and must be closely integrated to achieve maximum effectiveness.

The primary concern of the commander in planning the defense centers around the placement of his rifle companies. This is the point where the theories of nuclear defense diverge. Although the battle group commander will not normally think in terms of squads and platoons, a defensive posture is determined by the dispositions made at that level. For this reason this analysis must begin with the Infantry squad.

The squad must be retained as an integral unit in the defense. This employment is dictated by the absence of internal communication, the fact that observers for supporting weapons are not normally present and the squad's incapability of receiving and controlling major attachments. By disposing the men of the squad in mutually supporting two-man foxholes roughly 20 meters apart, a frontage of 100 meters can be occupied. When supporting weapons are employed in the squad's sector, a slightly greater frontage can be accepted.

A squad occupying a well-prepared position is considered capable of causing the enemy to mass at least a platoon for a concerted attack without nuclear firepower. This massed platoon may well be a suitable target

for improved non-nuclear weapons and for subkiloton-yield nuclear weapons as well.

The rifle platoon frontage (Figure 1) is approximately 550 meters —the combined frontages of the squads on line plus the distance on one flank which can be covered by fire with organic weapons. Coverage of this frontage is made possible by the internal communication net, infrared surveillance equipment and the increased firepower obtained from the new family of 7.62mm weapons. Under conditions of poor visibility, patrols and sensory devices are used to cover the gaps. The platoon radio net is particularly valuable should the platoon position be penetrated or threatened from the flanks or rear. The platoon leader, using his radio, can more quickly move men and weapons from the least engaged area into supplementary positions to meet this threat.

With two platoons deployed on line as described and one platoon in reserve the rifle company can control an area (Figure 2) approximately 2000 meters wide and 1300 to 1400 meters deep. The area of influence of this company is almost four square miles, which is over three and a half times that of the World War II rifle company and only slightly less than that of the World War II Infantry battalion.

Adequate means of firepower, surveillance and communication are available to cover this large area. In addition to the fires of weapons organic to the platoon, coverage of the intervals between companies is provided by company weapons—the 81mm mortars and 106mm rifles—by battle group assault weapons and heavy mortars, and by supporting artillery fires. Surveillance devices such as the AN/PPS–4, one of which will normally be attached to the company, assist in the surveillance of unoccupied areas. Depth and flexibility is provided by retention of a sizeable reserve.

Considering that the rifle company can be so disposed, a battle group with an attached tank company can logically be expected to defend a frontage of about 8000 meters. Figure 3 shows the concept of such a defense. Defense on so large a frontage is made possible by radios of greater

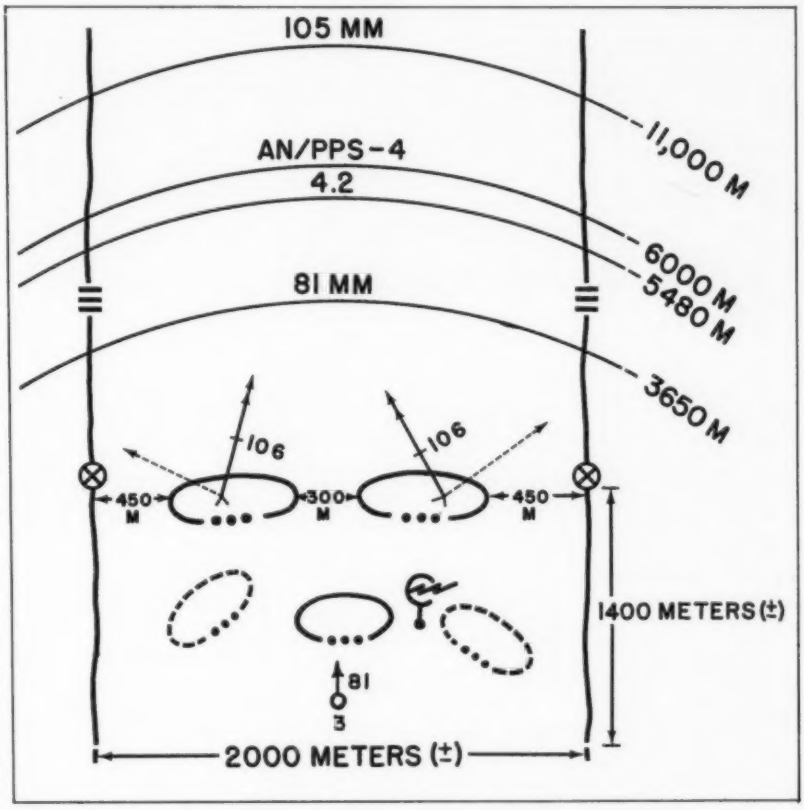


Figure 2. Rifle company area of responsibility.

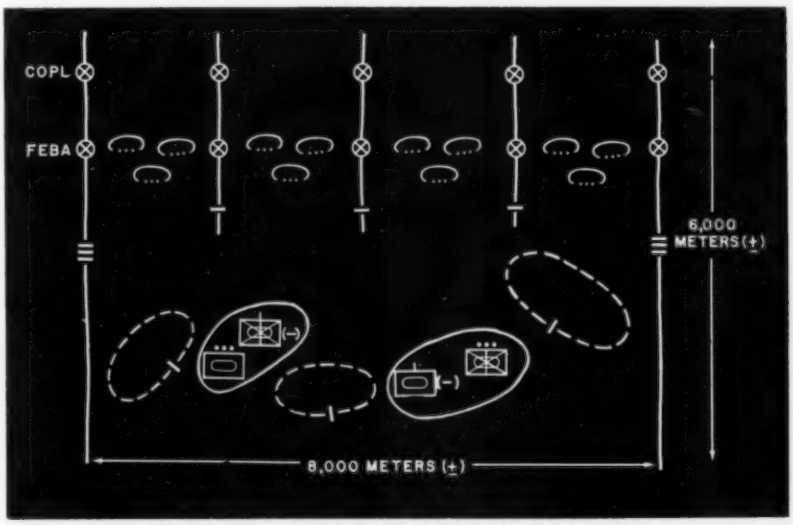


Figure 3. Battle group defending a normal frontage.

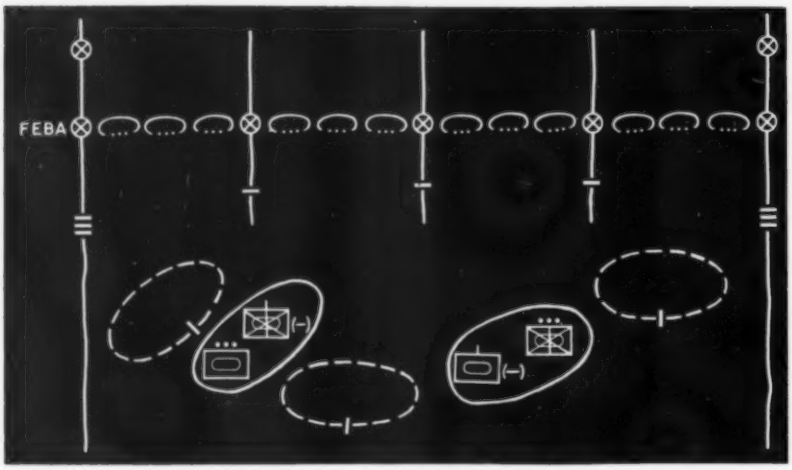


Figure 4. Defense of an extended frontage may require froward companies to place three platoons on line.

range and reliability located at company level, plus adequate means of surveillance and firepower.

The forward rifle companies are positioned astride likely avenues of approach and are strong enough to force the enemy to mass into suitable nuclear targets if he attempts to break through.

The fifth rifle company, and the tank company when attached, are retained in assembly areas as the battle group reserve. Sufficient positions are prepared to permit these elements to take on a blocking role if required. By cross-attaching platoons between a mechanized Infantry company and a tank company, the commander can tailor two forces of approximately equal capability for offensive and defensive action.

As the enemy closes with the forward companies, security elements withdraw into the company's defensive position. At the same time, elements of the company engaged in rear area security and surveillance move forward to occupy their positions. Thus the company will form a cohesive block on the approach it is covering. If the enemy pulls back, the security elements will return to their original missions. This also provides passive security from enemy nuclear weapons, since the company is dispersed over a large area when not in close contact. If the enemy uses nuclears against the prepared company position when in close contact, he will endanger his own forces also.

Under certain conditions the battle group may be required to defend on a much wider front (Figure 4). As illustrated here the companies do not hold a reserve, but every effort is made to retain a highly mobile battle group reserve.

It should be emphasized that each echelon of command establishes security according to its capabilities and looks to higher echelons for further security when necessary. For example, if the battle group is assigned a frontage in excess of 8000 yards it may not have sufficient force to man a combat outpost line. In such an event, it is anticipated that forward security for the battle group will be provided by the division. However, at no time will local security be disregarded. The distances forward of the FEBA at which this security is established will vary with the terrain, range of supporting weapons, and the size, capability and mobility of the force manning the security line.

The battle group commander prepares counterattack plans for each part of the battle area which he estimates may be penetrated. He prepares these plans in advance and gives highest priority to those possible penetrations which pose the greatest threat to the accomplishment of his mission. These plans are rehearsed to the extent time permits. In the counterattack, the battle group reserve is normally the maneuvering force, but the counterattack plan provides for employment of all unengaged organic and attached elements. The maneuvering force is supported by all weapons of the battle group, including, where practicable, weapons of the forward companies. A single coordinated blow is delivered by as large and as strong a force as the situation permits.

In defense, as in offense, the battle group commander provides for alternate command installations. He makes full use of the deputy battle group commander and the executive officer in establishing alternate control facilities. In addition, the deputy battle group commander may be used to command the combat outpost, reserve elements, a portion of the forces on the FEBA or rear area security forces in those situations which warrant organizing task forces for these missions.

This brief analysis of the concept of nuclear defense should be sufficient to show that the "middle road" offers much more potential than the extreme theories. The reorganization of the battle group and the provision of improved means have enhanced the battle group's capability to perform defensive missions. The battle group commander must skillfully utilize these added capabilities to defeat the attacking enemy, at the same time avoiding destruction of his own unit. A well organized defense, adroitly conducted, retains an advantage over the attacker despite the potentialities of enemy nuclear weapons. The commander must be prepared to exploit this advantage.

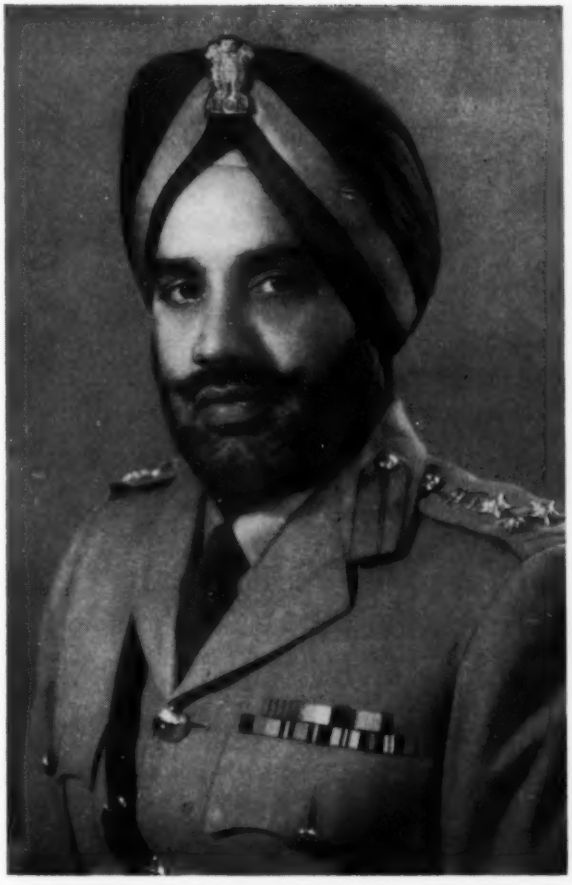
This is the second in a series of two articles by Colonel Gibson and Major Moore on the employment of the reorganized battle group and its subordinate units.—Editor

عشى كريماً *To Live With Honor*

تعلمر شريفا *To Learn With Honor*

حارب نزيحماً *To Fight With Honor*

The Philosophy of a Warrior



by Brigadier Rajendra Singh

The Indian Army's Director of Infantry shows how a man becomes the complete soldier.

IN THIS "era of military change and growing complexity," as Gen Maxwell Taylor put it, the necessity of military study has grown much greater than 5000 years ago when the Indian lawgiver laid down that study was the first and foremost duty of a warrior.

In the third century B.C., when Chander Gupta Maurya resolved to expel the Greek phalanxes from the soil of India, his clever minister, Chanakya, prescribed the study of scriptures, logic, economics, politics, history and military science for his

military leaders. To this list many subjects were added as human knowledge progressed. Study of war became a vast and difficult subject. As battle dealt more with physical force, warriors did not find sufficient time to improve their mental horizons and a time came when the studious soldier, the pen-pusher, was looked down upon in the professional hierarchy. This prejudice still persists.

In modern warfare, no nation, no army, no organization and no warrior can prosper, nay survive, unless leaders are not only superior in physical qualities but have developed great mental and spiritual capabilities by planned study.

Dynamic thought requires a deep reservoir of knowledge-power—not a smattering of military know-how—which concerns every facet of the national and international scene. The main task is to gain and maintain the intiative of ideas by the impact of new thoughts based on sound learning.

Learning is creative activity, motivated by the desire to know, to know more accurately and to know more clearly so that we can solve our problems in a more accomplished manner. The thirst to learn is half the battle and once that thirst grows the victory is in sight.

Creative activity can be divided into six aspects:

One	:	Information.
Two	:	Imagination.
Three	:	Appreciation[1].
Four	:	Resolution.
Five	:	Execution.
Six	:	Perfection.

Each aspect of this activity must be properly developed. Study is the chariot of knowledge and its two wheels are reading and writing. When this knowledge is harnessed to the steed of experience, the warrior is fitted to compete in the race for progress. "As the land will improve when it is sowed with various seeds, so shall the mind when it is exercised with various studies." This reminds me of the king who, asking Euclid whether he could not explain his art in a clearer manner, got the answer: "There is no royal road to geometry."

[1] Equivalent in American usage to "analysis."

INFORMATION

Information is facts, and facts must be correct. Anything a man knows —whether or not it is factual—is definable as knowledge, but only that portion which is factual is definable as truth. Truth is the greatest quality of a thinker, and spiritual training is prescribed in every army because a warrior in pursuit of truth must have courage. "Fearlessness," according to Mahatma Gandhi, "is the first requisite of spirituality. Cowards can never be moral."

A warrior endowed with a spark of spirituality selects the true pearls—facts. Without facts, knowledge cannot progress. As Ivan Pavlov says, "Perfect as is the wing of a bird it never could raise the bird up without resting on air. Facts are the air of a scientist: without them he cannot fly."

The only way to gather pearls is to go and get them from the ocean of knowledge. Rudyard Kipling describes how he collected his "pearls":

I keep six honest serving men
(They taught me all I knew).
Their names are What, and Why,
and When,
And How, and Where and Who.

When we apply an inquisitive mind to what we see, hear, feel and think, we fling open the gates of the treasury and pick our pearls.

The three sources from which facts can be gathered are reading, travelling and discussion. What we read, where we travel and with whom we converse should be objectively determined to gain insight and wisdom.

Reading is the main source. We do read for entertainment but reading for facts has to be serious and is best done in peaceful retirement. Sir John William Lubbeck, the noted British astronomer, says, "Books are to mankind what memory is to the individual. They contain the history of our race, the discoveries we have made, the accumulated knowledge and experience of ages, they picture for us the marvels and beauties of Nature, help us in our difficulties, comfort us in our sorrows and in our suffering, change hours of ennui into moments of delight, store our minds with ideas, fill them with good and happy thoughts and lift us out and above ourselves."

For reading, firstly, we must have good books. Bacon, in his *Essay of Studies*, says that "Some books are to be tasted, others to be swallowed, and some few to be chewed and digested." Selecting from the large number of books that are being published these days is an art by itself.

Secondly, we must have a system of annotations. Munshi Prem Chand, the celebrated Indian author, once said, "The sword of the scholar is the sharp point of a soft pencil." Mark the para's, underline the sentences and side-line the passages, and by the time the book is finished you have taken the juice out of it.

Thirdly, we must have retirement. When we read and contemplate, when we admire the beauty of a passage, the seeds of thought are laid in the receptive brain. Reflection waters the healthy seedlings and, stored in the memory, they are the granary of knowledge.

Travelling is another way to know people and places intimately. It increases our knowledge about others, their environment, their ways of living, their beliefs and fears, their language, their manners, behaviour and culture. By contact with different people we come to know ourselves better, learn to appreciate the point of view of others and become useful members of expanding society. Selfishness is wiped away and with a wider horizon we can better admire the beauties we discover.

Socrates tells us that for discussion we must have a learned person, a secluded place, learned company and serene atmosphere. In discussion, we must be logical. Many avenues are now open to military leaders for discussion and for expressing their views. The day of the yes-man is gone. Today we want courageous men who can put across their views without fear

or favour. Yet when taking part in debate or making remarks at the end of a lecture we need not be offensive; we must make our contribution in the fewest, simplest possible words appropriate to the occasion. We must develop the habits of quick thinking and creative imagination.

IMAGINATION

Imagination is the eye of the soul. It is a deep spring of human activity and the principal source of improvement. It is the power which brings ideas into meaningful and useful relationship by visualizing new combinations. It is the ability to create in advance a new plan or line of action which when tried proves practical.

Imagination distinguishes man from the animal and so does the degree of its development and usage differentiate the ordinary man from the leader. For proper development of our imagination we must maintain a wide outlook, like the window which opens onto a whole panorama. When we maintain a flexible outlook, we receive new ideas, are infused with a desire to express our views and assert our personalities so that we can improve any situation.

With imagination we can make proper use of the information that we have collected and collated to make a correct analysis.

APPRECIATION

Analysis is the logical way to deal with any problem. Military life is a constant repetition of problems which have to be dealt with quickly and correctly. We must place great emphasis on this thought process because every warrior has to face and solve his problems.

What is the problem? To solve any problem there must be logical thinking and for this there must be an aim, a purpose, a directing cause. For the thoughts to advance on correct lines, for our energies to be directed in the right channels and for our imagination to be absolutely concentrated, we must select our aim correctly.

For proper assessment of the situation we must consider all the factors honestly. Factors which are in favour and those against the attainment of the aim must be balanced to lead to a correct decision. It often happens that we start a proposition with a preconceived idea which prejudices the whole course of action and often leads to a wrong decision. For truth to prevail there must be no prejudice.

These thought processes are inclined to take some time but by practice can be cut to reasonable limits; they should never lead to procrastination but should strengthen resolution.

RESOLUTION

Resolution is the determination to act. There must be action and accomplishment to cut across indecision, to galvanize indifference with enthusiastic performance, to translate doubt of possibilities into realms of growing activity. To effect these transitions is the leader's peculiar prerogative and duty. 'He did the job,' is the tribute to leadership.

Resolution demands character, will power and judgment. Resolution combined with judicious analysis leads to correct decision. The harder the problem, the greater the requirement of character; and for correct and quick decision there must be judgment. Decisions must be reached only after cool calculation. Where there is doubt a risk may have to be taken. Action must not be postponed, for war is a gamble and we must be prepared to seize every opportunity. Experience teaches us when to parry and when to thrust.

Having resolved to act we can attain our aim by proper execution.

EXECUTION

Execution is action. It is the method and style by which decision is put into operation. The decision itself is vital, for in war, which is nothing but a series of actions, it would be a crime to be inactive. If we are driven by an urge to improve ourselves, we will not be lazy, we will determine ways and means to move forward. As a decision is made by us, so it is our duty to see it through.

Thus, execution requires persistence which in turn lives on faith. This faith, or self-confidence, is a product of active thinking and active living. We must adopt a positive attitude, and develop a rightful pride in ourselves, with a reasonable ambition and an intense desire for teamwork. Our lives are intertwined with others as is our happiness. So we must understand the problems of our mates and do our best to resolve them.

Execution requires cooperation and this will be forthcoming from a happy team. We must understand our superiors and subordinates in order to get the maximum output with minimum friction. This can best be done by having confidence in all and yet assigning each individual to a task within his capabilities.

Execution requires completion. Once the task is assigned, the leader must exert his personality by proper

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Brigadier Rajendra Singh of the Indian Army was commissioned in 1934, and was assigned to the Queen's Royal Regiment at Allahabad. In 1938 he joined the 1st Battalion, 4th Punjab Regiment, and saw service on the Northwest Frontier of India for two years. Later he held a variety of staff jobs, and in 1945 went to Burma as second-in-command of the 4th Battalion of the 14th Punjab. When the war ended, he was Grade I staff Officer at Army Headquarters. In 1948 he led the 1st Grenadiers (now 2d Guards) in the capture of Gurez. A year later, he returned to Jammu and Kashmir, where he commanded an Infantry brigade. Brigadier Singh, who is well-known in the Commonwealth as a military analyst and novelist, is at present Director of Infantry.

supervision. For this he must develop the habit of being at the right place at the right time. How? To be sure of being where he is needed, he must get to the most difficult place at the most difficult time. And he must remain there till the job is finished to his satisfaction. But this personal satisfaction must aspire to perfection.

PERFECTION

Perfection is the desire to reach the truth. Execution must be constantly improved by effort and patience. Effort has a spiral action; the more information we gather, the greater becomes our knowledge; the more problems we face, the stronger becomes the habit of correct analysis; the greater our experience, the stronger our resolution; and the greater our practice, the better our execution. Each short but sure step leads to the citadel of perfection.

Perfection can never be absolute for it is an ideal without limit, the ideal of beauty and truth, the ideal of a warrior to live with honour, to learn with honour and to fight with honour.

War for a righteous cause is a noble act. In the great epic Mahabharata, Lord Krishna says, "I elect glory even at the cost of Life." For the noble purpose of war we must develop a correct philosophy of life, distinguish right from wrong, and develop the character to pursue our ideal to the ultimate.

A warrior with proper study will become professionally competent, will gain a thorough knowledge of influences, will know the various courses open, and will have a wealth of self-confidence and enthusiasm. He will be the leader.

A leader must amass a store of knowledge. Human knowledge is nothing but an accumulation of small facts—the little bits of knowledge and experience, carefully treasured up, growing at length to a mighty pyramid.

Now comes the vital question: how to make use of this accumulated knowledge. The answer will come when it is needed. As Mahatma Gandhi has said, "When the heart is prepared for action, opportunity is seldom wanting." But the most important conclusion is that one must never give up the pursuit of learning, wisdom and truth. The day of battle is always at hand.

Marshal Foch, in his *Principles of War,* admits: "The truth is, no study is possible on the battlefield. One does there simply what one can in order to apply what one knows. Therefore, in order to do even a little, one has already to know a great deal and to know it well."

Study after a time often becomes boring. This is the hurdle which comes in the way of every creative worker—soldier, scientist, artist and leader. Those who falter, stop and remain mediocre; those who persist, surmount the obstacles to progress and join the galaxy of man.

Lord Buddha says, "Through zeal knowledge is found, through lack of zeal knowledge is lost; let a man who knows this double path of gain and loss so conduct himself that knowledge may grow."

LETTERS *(Continued from page 2)*

The Lebanon crisis illustrated this problem beautifully. Initially neither the Marines nor the Army had helicopter support. An aircraft carrier was hastily loaded and dispatched to the scene. But by the time it arrived the crisis had passed.

Major General Hamilton H. Howze, critiqueing Operation Banyan Tree in the July issue of *Army Information Digest,* said, "A detachment of transport helicopters . . . would have been particularly valuable to the battle group. The rough terrain had been made more difficult by the remarkably elaborate artificial obstacles emplaced by the Aggressors. In these circumstances, had the 501st had available sufficient helicopters to move wide around the enemy's flank and emplace in his rear, the situation could probably have been brought to a conclusion by noon of the first day. Actually our division tried to persuade the Navy to carry 10 of our H34s to Rio Hato on a small carrier, but this effort was unsuccessful."

Rather than depend on naval support and the proximity of the sea, why not turn the problem back to our civilian contractors? It ought not be too difficult an engineering feat to sectionalize our light and medium transport helicopters. They could then be broken down into component parts small enough to fit the cargo compartment of a C130. These units could be parachuted singly, or in composite groups, and reassembled in the drop zone.

For example, the H34 might be broken down into a rotor and cockpit group, a fuselage and motor group, and a tail boom and torque rotor group. Reassembly might require some support equipment, but probably no more than a lightweight hydraulic crane, or possibly some form of collapsible scaffolding.

Whatever solution proves feasible ought to be injected into our aircraft design soon, before we get too sizeable an investment in strategically immobile tactical aircraft. Our air-transportable STRAC units ought not be separated by time and distance from the advantages of tactical air mobility.

FRED W. HALLBERG
Lt, Infantry
Fort Leonard Wood, Missouri

Lieutenant Hallberg's comments have been referred to the Infantry School's Combat Developments Office. Opinions from the field on this or any other subject are welcomed.—Editor.

Reprints

Sir:

Congratulations on your very fine July-September magazine.

We not only enjoyed it, but would like to reprint two of the many good articles: "Assault!" by Maj T. H. Jones, and "The Soviet Officer Corps," by Maj P. S. Grant.

Best wishes; keep up the good work.

T. N. GREENE
Lt Col, USMC
Editor and Publisher
Marine Corps Gazette

Sir:

If you have reprints of "A Staff for the Deputy," by Maj Robert H. Brigham [July - September 1959 issue of Infantry], I would appreciate your sending me two . . .

ROBERT L. HUGHES
Colonel, Infantry
Middleton, Wisconsin

Unfortunately, Infantry *cannot provide reprints of its articles. However, providing the author assents,* Infantry *is happy to grant general reprint rights.* —Editor.

Continued on page 74

Put Yourself in This Picture. Can You Solve the . . .

PROBLEMS of COMMAND

The new Trainlead films portray realistic leadership situations which you can use as helpful supplements to leadership instruction.

by Capt E. G. Magnuson

EVERY successful commander has formulated definite theories on the subject of leadership. But what about the young officer who lacks this experience? How can he best learn the fundamentals and develop the essential techniques? How can we impart to him the knowledge born of the experience of others?

In recent years, great changes have been made in Infantry organizational and tactical concepts. These changes have resulted in many new developments in the military educational field. However, the basic doctrine and principles of leadership have not changed to any great extent—except that increased emphasis has been placed on leadership at all levels. In keeping with this new emphasis, the Special Subjects Department of the Infantry School is presently engaged in the development of new techniques for presenting realistic leadership problems to commissioned and noncommissioned officer students. These problems consist of

REALISM is injected into leadership instruction by these films. Competent actors play convincing roles against convincing backgrounds.

typical situations which the student can expect to encounter in the field, and are designed to provoke thoughtful classroom discussion.

There are, of course, several possible methods of instruction. There is the academic approach in which the instructor discusses the fundamentals of leadership and presents his practical material orally or through the use of written texts and exercises. And there is the concrete approach which capitalizes on two of the individual's senses simultaneously —sight as well as hearing. Obviously, this last method requires either a skit or a sound motion picture. The most practical and economical method of presenting live situations is through the use of short films in which the *student assumes the key role* of solving leadership problems.

The Leadership Committee of the Special Subjects Department has recently completed supervising production of a series of leadership films under what is known as the Phase II Trainlead Film Program. The words "Phase II Trainlead" merely comprise a distinctive phrase describing the production portion of the total program. Phase I Trainlead was the pilot phase, or the research and experimental forerunner of the present program.

The program as a whole is designed to provide the instructor with a series of realistic leadership situations on film which are intended to supplement the present method of presentation, i.e., written practical exercises, and situations presented orally or by means of a tape recorder. These films are all black-and-white sound productions, and running time varies from three to eight minutes each.

Let's take a look at one of the pre-commissioned film situations and see how it is used to supplement a discussion of senior-subordinate relations. The title of the film is "Senior-Subordinate Relations" (release number TF 7-2639), and its running time is four minutes. In the film, a young second lieutenant, assigned to command a platoon-sized unit, is presented with a leadership challenge. Because of his inexperience, he has relied heavily on his sergeant in the past, and has permitted him to maintain temporary control of the unit. Now, however, as the lieutenant acquires experience and gains confidence in himself, he begins to assume his proper control, much to the displeasure of the sergeant, who seems to resent the lieutenant's assumption of command. The company commander learns of the existing friction and asks the lieutenant what he intends to do about it. Here the film-situation ends and the student audience is asked to solve the leadership problem.

Students are given five minutes in which to discuss among themselves solutions to the problem. They are asked to analyze the problem in light of the concepts and principles outlined prior to the showing of the film.

Among the questions asked after the discussion is, "As Lieutenant Ryan, what would you do to correct this situation?" Response is always hearty and indicates a vital interest in the leadership problem, mature consideration and eagerness to participate. Solutions themselves reflect an unusually clear analysis of the problem—to a degree uncommon among other types of teaching vehicles.

The film situations are negative in nature. That is, the problems challenge the student's imagination and ingenuity to provide a logical solution to a definite area of conflict created

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Capt Ellert G. Magnuson received a battlefield commission during World War II. He left the service in 1945, but returned in 1950 to become a company commander with the 20th Infantry. A year later he was a platoon leader in Korea, serving in the 19th Infantry. He was wounded, and after his recovery was assigned as battalion S1 and executive officer with the 20th Infantry. He went to Alaska in 1953 to become a company commander in the 4th Infantry, returning to CONUS to enter the USAIS Associate Advanced Course. Captain Magnuson is now a member of the Leadership Committee of the School's Special Subjects Department.

by either poor leadership practices or negative individual behavior.

The present program consists of 25 films. The first 14 are designed for use at the pre-commissioned level—OCS, ROTC and the United States Military Academy. Review and analysis of these films indicates that they may also be appropriately used at the *basic* post-commissioned level. Production of these films has been completed and they are available in film libraries throughout the Army. The remaining 11 films are primarily designed for the post-commissioned level, i.e., Basic, Company Officer and Advanced courses. Only seven of these have been approved for production and are also available in film libraries.

Generally, there are three films under each of the subject titles. This allows the instructor some flexibility in their use and in the selection of situations which he may feel best suited to his particular branch of service or class level.

The situation areas (film titles) are generally those currently being taught. These are: Assumption of Command; Senior-Subordinate Relations; Physical Leadership; Chain of Command; Counseling; Instructional Techniques for Small-Unit Leaders; Handling of Subordinate Leaders in Combat; Selection of Subordinate Leaders; Utilization of Personnel; and Staff and Subordinate Commander Relationship. Those situations pending production-approval are three films on Counseling and one on Selection of Subordinate Leaders. These are being held in abeyance pending field evaluation of the first 21 completed films.

These films *do not,* in themselves, teach anything, but are merely vehicles to aid the instructor in presenting a realistic, clear-cut and understandable problem, and thereby to stimulate discussion and point up the necessity for proper application of leadership principles and techniques.

No solution, as such, accompanies the films and instructors are thus permitted considerable latitude in their use. However, suggested introductory remarks, points for discussion and questions based on the film are included in the instructor's film reference as an aid or guide.

PRE-COMMISSIONED SERIES

TF 7-2636	Assumption of Command	1	5½ min
TF 7-2637	"	2	5½ min
TF 7-2638	"	3	5½ min
TF 7-2639	Senior Subordinate Relations	1	3½ min
TF 7-2640	"	2	4 min
TF 7-2641	"	3	5 min
TF 7-2642	Physical Leadership	1	4 min
TF 7-2643	"	2	7½ min
TF 7-2644	"	3	7½ min
TF 7-2645	Instructional Techniques for Small Unit Leaders	1	5 min
TF 7-2647	Chain of Command	1	3½ min
TF 7-2648	"	2	5 min
TF 7-2649	"	3	5 min
TF 7-2700	Staff and Subordinate Commander Relationship	1	5 min
TF 7-2701	"	2	4 min
TF 7-2702	"	3	7 min
TF 7-2706	Handling of Subordinate Leaders in Combat	1	6 min
		1	6 min
TF 7-2707	"	2	6 min
TF 7-2708	"	3	6 min
TF 7-2709	Utilization of Personnel	1	4 min

TRAINLEAD film titles now available. Fifteen additional films dealing with decision-making in combat have been approved for production.

Prior to the final approval of the film treatments, coordination was effected with all service schools as well as with the Leadership Human Research Unit at Fort Ord, California. All coordinating agencies expressed their interest in and enthusiasm for the program.

Prior to the Trainlead program, the Leadership Committee of the Infantry School had detected a definite need for an improved method of presenting typical leadership situations so that each student thoroughly understood what the real problem was. Too often, situations were not presented in definite, unmistakable terms, and the resulting confusion impeded student learning. Use of Trainlead films at the Infantry School, although limited at this time, indicates that these situations definitely do stimulate student interest, provoke discussion, and facilitate clear expression of leadership challenges. The films are a vast improvement over the old methods of setting up leadership problems for student discussion.

With the ever-increasing emphasis placed on leadership at all levels, it is quite apparent that those involved in teaching this important subject must be afforded the best possible vehicle to ensure that students take away from their classes a sound working knowledge of the ways in which leadership principles may be applied to leadership problems. In this way they learn creatively and personally, and leadership is transformed from a formal subject to a concrete matter of individual responsibility.

The Phase II Trainlead Film Program is merely the beginning of what may well be a new, all-service method of presenting leadership instruction.

THE FAMILIAR PLATOON MEDIC OF FORMER WARS HAS DISAPPEARED FROM THE FIGHTING SCENE. THE NEW CONCEPT OF MEDICAL SERVICE RELIES HEAVILY ON THE INFANTRYMAN HIMSELF.

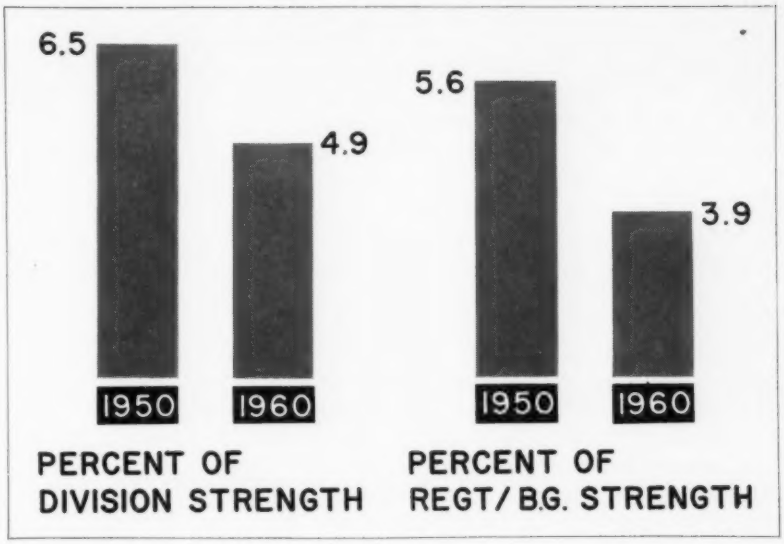
Modernized Medical Support

by Lt Col George T. Britton, MC

THE ART and science of warfare has changed so rapidly during the past few years that many adjustments have been necessitated in the supporting medical service. Routines and techniques developed during the Civil War and refined through two world wars and Korea may no longer apply to current concepts of mobility and dispersion, or to manpower austerity. In the former ROCID battle group the organization of the medical platoon still adhered largely to principles established through past experience and, as a result, it has been evident for some time that this unit could provide only marginal support under conditions of modern warfare. Reorganization of the Infantry battle group under TOE 7–11D provided a logical opportunity to reevaluate the organic medical support and, working within a stringent personnel ceiling, to reorganize the

medical platoon along more realistic lines.

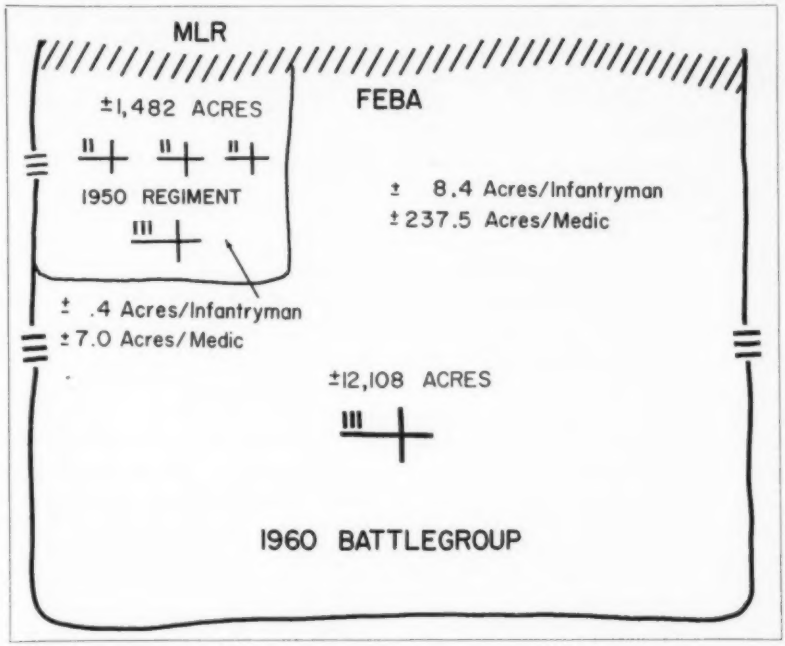
The major problem faced by the organizational planners was posed by the limitation on personnel in the battle group. Naturally, since the purpose of the "lean and mean" Infantry division is to fight, it is difficult to justify additional medical soldiers who do not fight. Fundamentally, such limitation on non-fighters in the forward areas is sound, since approximately the same support is required to sustain a man in the forward area whether he is an Infantryman, a medic, or an indigenous laborer. And any increase in one category of personnel must be matched by a decrease in another. More medical soldiers would increase the efficiency of medical support, but there may be a point of diminishing return. The question of whether or not the spaces allocated are sufficient can only be answered by the test of warfare or by vigorous field tests conducted in realistic settings. Nevertheless the worrisome fact remains that the war of tomorrow, at least initially, will have to be fought with formations and allocations arrived at today. The bar graph (above, right) shows vividly the reductions in the strength of medical personnel at division and battle group levels to date. This reduction is further complicated by increased dispersion called for in the battle area, both in the offense and the defense. However, medical problems cannot be treated "across the board" with other technical service problems. For example, other technical services are concerned mainly with furnishing cargo or services forward from the rear. The critical area for instantaneous decisions in these branches is in the rear—in the trains area or further back. But the Army Medical Service is concerned with the movement of extremely perishable "cargo" in the opposite direction, from forward areas back toward the rear. The critical area for instantaneous medical decisions is forward. This is recognized in the fact that the division surgeon operates from division main CP and



COMPARISON of medical personnel strengths at division and battle group levels now and before.

the battle group surgeon from battle group headquarters.

The impact of dispersion on medimedical service can be seen by a simple comparison of areas. While the acre is not a common military measurement, the chart (below) shows that the forward battle area has increased by about eight times, the area per Infantryman has increased roughly 21 times and the area per medic, 34 times. Of course not all of this area will be populated all of the time, but the medical platoon is responsible for casualties resulting from patrol action, counterattacks or other activity anywhere in the area. The areas illustrated are to scale, the installation symbols representing a treatment station with one medical officer. Actually, count-



AREA normally assigned to a battle group compared with a regiment's defensive zone in Korea. Symbols represent surgeons present in aid stations.

ing the staff surgeon of the old and new formations, the decrease in medical officers has been from five to two.

Consider the foregoing in light of the obvious fact that the mass destruction weapons possessed by our potential enemies can produce far more casualties than in the past. Moreover, the lack of group identification brought about by dispersion of units, and other emotional strains, conceivably will result in a greater rate of combat exhaustion and other emotional breakdowns. And finally, doctrines of mobility and dispersion will preclude most environmental sanitation measures that have held down the incidence of disease in past wars. We must expect more casualties from pestilences of war. Typhoid fever, influenza, malaria and hemorrhagic fever have all reached epidemic proportions during wars fought in this century. It is only logical to assume that any future war also will have its epidemics, even if our enemy decides *not* to employ bacteriological warfare.

An assessment of these facts permits only one conclusion. Medical service at the fighting level is radically austere and may have to "play the percentages." The medical chain of evacuation can reach only as far forward as available men and equipment permit. Should he become a casualty, the combat soldier must rely on himself or his fellow Infantryman. "Buddy-aid" and "self-aid" must replace the platoon medic. In the new organization of the battle group's medical platoon, this familiar figure of the past wars has disappeared—out of necessity rather than preference.

It was clear that the new organization should have more aid-station personnel. As the chart (next page) shows, only five enlisted men were available in the old organization to man the aid station on a 24-hour basis. If it were necessary to operate two stations—a distinct possibility—an already bad situation would have been worsened. This limited assistance for the doctors created a bottleneck at the very level where decisive treatment should be available. The only way to add personnel to this group was to readjust the tasks within the platoon. Referring again to the chart, the ROCID battle group had enough aidmen to furnish one to each combat platoon and enough litter teams and ambulances to supply one to each rifle company. Since the new battle group would have five rifle companies instead of four, it was impossible to continue this level of support even if no personnel were added to the aid station group. As a consequence, it was decided that the number of aidmen would be reduced to seven—one per company—and a new concept of aid and evacuation developed. The redistribution of manpower within the platoon is shown in the chart.

The new concept of medical support places the majority of the medical platoon on wheels—understandable in view of the concepts of increased mobility and dispersion. The 11 enlisted men and the two ¾-ton trucks now authorized the treatment section give the platoon the capability of operating two independent aid stations, one controlled by the platoon leader (a Medical Corps captain) and the other[1] managed by his assistant (a Medical Service Corps lieutenant). And the substitution of litter jeeps for litter teams means that now only two able soldiers are needed to evacuate five disabled ones instead of the old ratio of four able to one disabled.

Other basic improvements will enhance the platoon's effectiveness. For example, two of the men in the treatment section are highly trained medical assistants (MOS skill level .30). These specialists, not previously authorized the platoon, are capable of carrying out certain manual and mechanical surgical procedures formerly performed only by surgeons. Although their training does not qualify them to make technical decisions, they are still capable of performing delicate treatments under the surgeon's general supervision.

The platoon has also been given added communication capability. The battle group surgeon's AN/VRC–18 and the four AN/PRC–10s will allow closer operational control of the platoon and make for more rapid pickup and evacuation of casualties.

As desirable as they may be, these improvements alone do not make an efficient medical support system. This new organization would be useless without a workable concept of casualty treatment and evacuation. And this concept, regardless of whether there is a platoon medic or not, must start at the fighting level. The Infantryman himself must provide the first link in the chain of treatment and evacuation. The frontline ambulance team will rarely be close enough to render immediate aid. Therefore, it is conceivable that able men will have to be used to move the seriously wounded to a place where they can be picked up by the litter jeep. This is especially true when the platoon is operating over terrain not easily negotiated by vehicle. The responsibility for initial treatment and evacuation lies with the small unit leader—not the evacuation team. Certainly this situation will add further emphasis to the training of the combat soldier in "self-aid" and "buddy-aid."

It is worthy of note that Department of the Army has increased the amount of first-aid training given the

[1] Normally, the battle group surgeon will spend most of his time at this second station to direct professional care of patients.

Lt Col George T. Britton, Medical Corps, was commissioned in 1941 after graduation from the University of Michigan medical school. He served in the Korean War as commanding officer of the 629th Medical Clearing Company and division surgeon of the 7th Infantry Division. Later, he became medical staff officer in the Office of the Chief of Army Field Forces and, after attending USACGSC, commanding officer of the 2d Evacuation Hospital in Germany. Colonel Britton then was assigned as Deputy Surgeon in Headquarters Communication Zone, USAEUR. At present he is Medical Committee chairman in the Infantry School's Special Subjects Department.

soldier to 20 hours. This training undoubtedly was extended mainly because of concern over the effects of mass-casualty weapons. Nevertheless, the value of this extended training, in view of the availability of medical support, is obvious. With this additional training and proper integration of first-aid into small unit exercises, the result *can* be an upgrading of individual skills so that every soldier is as capable as the former platoon aidman.

The company aidman is of prime importance to the proper functioning of the new system. He usually will operate an informal company aid post near the company command post. He will control the evacuation teams present in his company area and, by making use of organic company communication, coordinate the evacuation of litter cases from the forward platoons. Additionally, he will provide emergency treatment for casualties occurring in his vicinity and he will also examine and treat the walking wounded and any other casualties evacuated to his post on company transport. In some situations he will be called upon to conduct company sick call formation (to the limit of his skill) and he will keep the company commander informed of the medical and sanitary conditions of the company. Efficient medical support of the company largely depends on how well this man does his job.

The company aidman will receive assistance from the medical specialists who make up the evacuation teams. Although these teams will be under centralized control in most situations, they can be allocated to each company. The mission of the evacuation teams is to provide initial emergency treatment for the seriously wounded and to move them as rapidly as possible to the nearest aid station. These teams will habitually operate as far forward as possible without coming under direct enemy observation and fire. In practice, the teams at times may operate in the vicinity of the rifle platoon CP. Since it is important that the teams be completely familiar with the terrain and the tactical situation, it may be more efficient for one or two teams to operate exclusively within a company area, collecting casualties and evacuating them only to the company aid post. From there other evacuation teams could remove the wounded to the aid station. Of course, other techniques of operation will be derived from experience gained in the future.

INFANTRY BATTLE GROUP MEDICAL PLATOON

	OLD TOE 7–12R	NEW TOE 7–12D
Officers		
Battle Group Surgeon (BG Staff)	1	1
Platoon Leader (MC)	1	1
Assistant Platoon Leader (MSC)	0	1
Enlisted men		
Headquarters	3	3
Treatment Section		
Company Aidmen	22	7
Aid Station Attendants	5	11
Section Leader	1	1
Litter Bearers (4 teams)	16	0
Ambulance-Driver Aidmen	4	14
Ambulance Aidmen	0	14
Total	53	53
Vehicles		
¼-ton Truck, Utility	0	1
¼-ton Ambulance	4	14
¾-ton Truck, Cargo	1	2
Total	5	17

MEN and EQUIPMENT assigned to the ROCID medical platoon (old) and to the present platoon.

Doctrinal changes toward mobility and dispersion cannot ignore basic medical and surgical principles of wound recovery. Rapid evacuation alone is not the answer. Patients must be stabilized prior to movement to prevent death en route. It often requires one or two hours in a medical installation before fluctuations in blood pressure and in pulse and breathing rates are controlled sufficiently for a patient to be moved safely. However the aid station operates no mess, so the evacuation policy of the batle group is measured in hours and not in days.

Each aid station will keep a roster of all casualties treated, noting thereon the disposition of the patient. This roster is for use by the battle group surgeon in preparing his medical estimate and by the S1 in preparing his personnel reports. Since the platoon has only one clerk to serve both aid stations, elaborate routine reports should not be required by unit SOPs.

Evacuation beyond the battle group aid station is generally unchanged. Ambulances of the division medical battalion will remove patients from the aid station to the clearing station, or evacuation of critical cases by helicopter ambulances of the field army may be requested by the surgeon through medical channels. With presently available equipment, helicopter evacuation is limited by darkness, adverse weather and enemy air action. Also, allocation is still based on medical need and is usually provided only to save life, limb or sight. There may be occasions when nonmedical aircraft can be used for evacuation, but there are serious drawbacks to this. Normally no medical attendants can be provided on these flights and, since there is no provision

for exchange of medical property, the medical platoon might be quickly drained of its blankets, litters and splints.

The operation of the battle group treatment section will vary according to the tactical situation and the number of casualties. As stated before, the section can maintain two aid stations should the need arise, thus permitting the surgeon a certain amount of flexibility in supporting the battle group's operations. In a rapidly changing situation such as an attack or a retrograde movement, these stations may be separated in depth so that they can be displaced leap-frog fashion. This method allows for continuous treatment during the operation. In more stable situations, such as in defense or when the battle group elements are separated by outstanding terrain features or great distances, the two stations may be deployed laterally.

In previous wars the ideal location for the aid station was well forward on the lines of drift so that casualties could receive professional care more quickly. This was acceptable when combat resembled football, with a fairly rigid forward line. Under those circumstances the aid station could operate in the "backfield," with little concern about interruption of its task of treatment and evacuation. But it appears that future warfare is more likely to resemble basketball—a process of move and countermove played over extremely large "courts." Enemy elements can be expected to move between and behind our units. Battle casualties can be expected to occur in and around company areas from action with these elements and from the effects of artillery, rocket and air activity. This, of course, means that casualties can now be expected to occur anywhere in the battle area—not just on the forward edge of the area. The only practical location for the aid station under these conditions is in a centralized position within a defensive position so that there will be a smaller possibility of frequent interruption of service. This may be at about the depth of the battle group CP. In effect, then, depending on the situation, the aid stations may be as far as five kilometers from the frontline units.

Future warfare holds many unknowns for the medical service. There is little likelihood of accurately predicting casualty loads or of determining in advance where these loads will occur. Control of the air at the onset of hostilities may not exist. Even if the enemy has ratified the Geneva Conventions and has disciplined forces, the Red Cross emblem cannot protect a man from mass-destruction weapons. The zone of the interior may or may not be capable of receiving casualties from the battle zone. And care for many wounded POWs may result in decreased care for U.S. patients. All of these variables, to varying degrees, will affect the medical service at the fighting level. While it cannot be said that the organization and concept of operation of the medical platoon as described here will be sufficient to meet any and all of these possible conditions, the platoon is set up in such a way that it serves as a good basis for adaptation to meet changing needs. However, it should be kept in mind that in the case of peak casualty loads resulting from enemy use of mass-destruction weapons or other causes, platoon must be augmented by other troops. In order to plan realistically for all aspects of nuclear warfare, commanders must give serious consideration to this possibility.

THESE QUESTIONS ARE VITAL.

Send your answers to the Special Subjects Department, United States Army Infantry School.

Since the deletion of map reading from Basic Combat Training, what additional training is necessary for medical platoon troops to maintain day and night orientation in the dispersed battle group area?

Is the Infantryman's first aid packet adequate for future warfare?

Is the current aidman's kit adequate for future warfare?

Within the rifle platoon area is there a need for folding medical litters to expedite the evacuation of wounded in combat?

What modifications of the frontline ambulance are necessary for support of Infantry operations?

When hot food is served to the dispersed battle group elements, will individual mess kits be used? If so, how will mess gear be cleaned?

What will be the space-time impact on medical treatment and evacuation caused by the greater dispersion of combat elements?

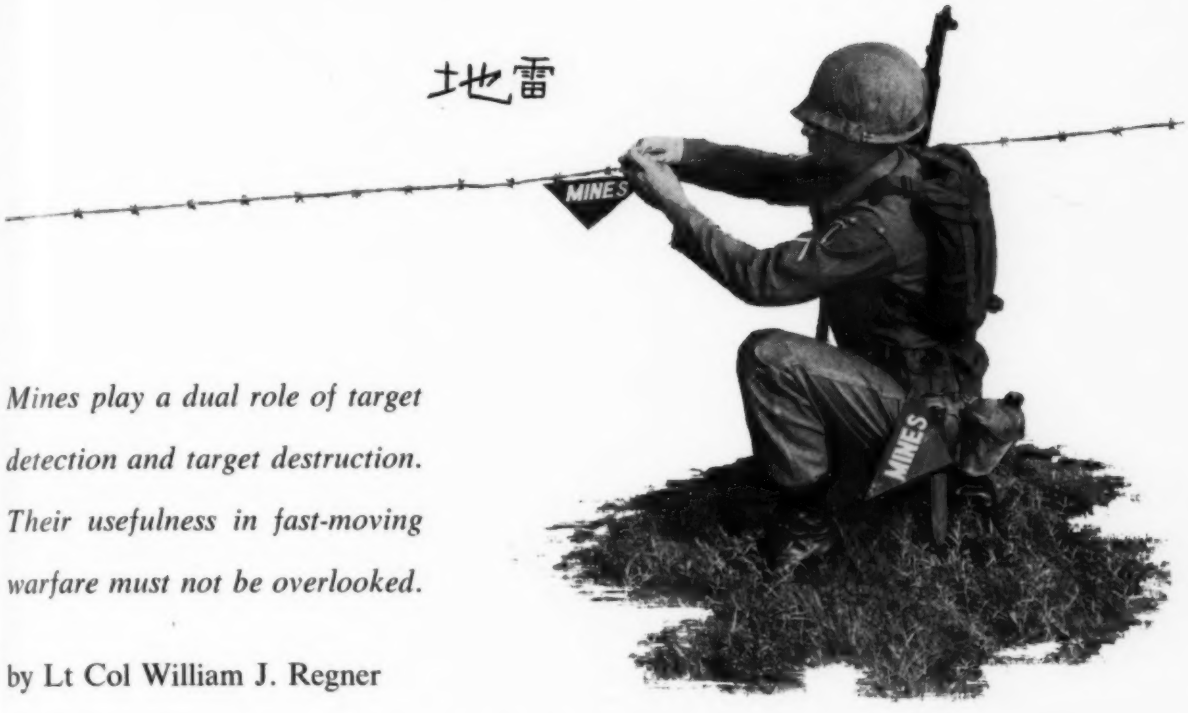
How will the battle group headquarters company provide food for medical personnel and patients, particularly when two aid stations are established laterally?

What are the morale implications—particularly at the platoon level—of reduced Infantry medical support?

What procedures will be used for the safeguarding of wounded prisoners of war who require medical care and evacuation?

Achtung Minen!

地雷



Mines play a dual role of target detection and target destruction. Their usefulness in fast-moving warfare must not be overlooked.

by Lt Col William J. Regner

IN ANY language, the meaning is the same. Mines are in the area.

Infantrymen develop a personal interest in the soil at their feet, and tankers sit light in their seats. Columns fail to move, time-tables are thrown off, attacks are halted or lose their momentum.

Military histories are filled with accounts of encounters with mines. The German armies of World War II learned the value of mines quickly, and employed them with great success against the Allied forces on all fronts. The teacher of the German was the Russian, and the schoolroom was the plains of Russia, where the use of mines occurred on an unprecedented scale. Minefields containing 10,000 to 100,000 or more mines were common and this massive use of mines greatly influenced the tactical operations on both sides.

This history is of more than academic concern to the Army, for the fact is that the usefulness of mines has definitely increased in the intervening years. This broadening utility has resulted from the substantial changes in our organizational and operational concepts brought about by the nuclear age.

Nuclear weapons force us to operate with maximum dispersion consistent with control and our mission. Deep objectives and penetrations will characterize offensive operations—our own and the enemy's. The greater and more porous frontages, and the tactical uses to which they will be put, create a convincing requirement for surveillance and firepower to cover the ground that can no longer be physically occupied by the man. The wide-ranging enemy must be detected, and once detected, destroyed.

Ordinarily surveillance and firepower means are still inadequate to provide the kind of coverage required. Surveillance devices are not yet sensitive enough to notify us of all enemy penetrations in time for us to react; our firepower is not yet mobile enough to allow us to apply it every time with the kind of warning surveillance now gives us.

There is little doubt that if another war comes, whether nuclear or nonnuclear, every effort will be exerted by both sides to make it a war of mobility. The fact that the majority of Soviet divisions are mechanized, motorized or armored drives home the point that both sides will be capable of the kind of penetrations mentioned above. Such penetrations, while they immeasurably increase the defensive problems of detecting targets and applying firepower to them, also create an offensive problem of protecting the vastly extended flank or the open rear.

Our doctrine in the defense is to influence the enemy's effort so that he will be forced to fight on ground

of our choosing, and to channelize his movement into preselected killing zones. Are we being realistic in presuming that our fire and movement alone will be able to accomplish these ends?

In the deep blows at distant objectives which will especially characterize offensive warfare, the vulnerability to counterblows which results from such tactics must be reduced. The objectives we take will be harder to hold, for consolidation, resupply and support will be complicated by distance or dispersion.

The strange thing about mines is that they combine the two functions of target detection and target destruction. Properly employed, they are able to detect the most improbable breakthrough or counterattack, and once they have detected it, they have no difficulty in applying their firepower. For this reason, mines are peculiarly suited to the kind of warfare I have described. They represent an important means of increasing our chances for victory on the modern battlefield, and of ensuring that our doctrine does not outdistance our capabilities.

This, after all, is the constant danger of paper wars. It is all very well to theorize about swift strikes and bold maneuver, but we must not forget that as these tactics open new possibilities of success, they create as many possibilities of weakness—possibilities which we must counter in our own operations and exploit in the enemy's.

The American Army has never employed mines very widely, and has displayed very little enthusiasm for mine warfare. This is difficult to understand in view of the many unpleasant and seriously disruptive encounters we had with enemy mines in North Africa, Italy, Germany and Korea. We have consistently failed to train our troops in the proper employment of mines. We have allowed them to be careless, and have not impressed upon them the importance of marking, recording and reporting minefields. This is indicated by our casualties from friendly mines at Bastogne, for instance. If we stress the requirement for proper mine employment, emphasizing it in training and planning, then we can certainly overcome the obstacles which have tripped us up in the past.

In October of last year, the Infantry School published its current position on mine warfare. It not only envisions a wider use of mines in the future but it also identifies the Infantry as the prime user of this weapon. Previously, mines were considered primarily an Engineer responsibility, but the nature of the modern battlefield—its requirements for dispersion, self-sufficiency and speed—has indicated that mines belong in Infantry hands.

The School position states specifically, "Minefields will serve as defensive obstacles around and between islands of resistance in the forward area and critical installations in the rear." Here, then, is a decisive means of coping with frontages that cannot be physically occupied or even covered by fire. Mines deny the enemy unrestricted choice of ground. Especially in view of new developments in mine design, they are capable of making large areas untenable except at tremendous sacrifice. Any enemy, however determined and ruthless, will give this factor serious consideration.

The School goes on to say, "Minefields will be laid behind the line of contact to channelize enemy penetrations between forward units into killing zones." Thus mines will be employed as an adjunct to fire and movement in order to force the enemy to concentrate in areas of our choosing. To prevent this seizure of initiative, the enemy may precede his attack by saturation firing. Though personnel are vulnerable to these fires, minefields by actual test are relatively immune. A well-conceived barrier plan, including extensive mining, could determine our success in imposing our will upon the enemy in this type of operation.

The Infantry School has also determined that "during offensive operations extensive use will be made of barrier minefields to block and deflect enemy attack formations from major units and from critical installations behind the combat zone." Mines, then, will cover our flanks and rear, supplementing our surveillance and firepower. They will also aid us to hold the objectives we have won. Mines, in fact, introduce into the very fluid operations we contemplate a valuable element of security which we cannot afford to ignore.

New developments in mine design deserve some attention, for they will aid us in accomplishing the ends I have outlined. Though precise details of these developments are, of course, not available for general dissemination, we know enough of the basic characteristics to be able to draw some conclusions about their role in increasing the flexibility and effectiveness of mine warfare.

Bulk and weight, to begin with, have been greatly reduced without any decrease in effect, and sometimes with a definite increase. This, in itself, is a significant improvement. In addition, scatterable mines (which are easily laid over broad areas) and

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Lt Col William J. Regner received a Regular Army commission upon completion of ROTC at the University of Oregon in 1942. During World War II he served as a company commander in MTO. After graduation from the USAIS Advanced Course in 1950, he became Infantry advisor to the Turkish Army. He commanded the 3d Battalion of the 34th Infantry in Korea, and later was plans and operations officer in Headquarters Eighth Army, Japan. In 1957 Colonel Regner was assigned to the Infantry School's Weapons Department as chairman of the Special Purpose Weapons Committee. He is now attending USACGSC.

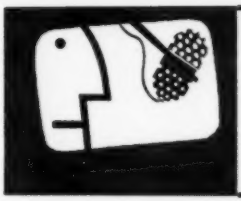
self-sterilizing mines (which are active only for a pre-set time interval) have been developed which greatly extend the applications of mine warfare. Obviously, these developments will reduce the danger that friendly mines may hamper our movement as much as the enemy's. In fact, such developments have produced a new weapon, with new capabilities that, we have seen, are much in demand on the nuclear battlefield.

Mine delivery has also been improved. Mechanical mine-planting devices have been invented which greatly speed the laying of conventional-type mines. In addition, techniques for the use of Army Aviation in mine-laying are being developed.

Aerial delivery of mines had previously been the province of the Air Force. However, lightweight, scatterable, "timed" mines are especially adaptable for use by Army Aviation. Aerial mining in the path of a moving enemy, accomplished with speed and ease, can deny him the use of a route or area, disrupt his organization or assembly, and create, when desirable, the prolonged effect which is beyond aerial bombing or artillery fires. Army aircraft are immediately responsive to the will of the combat commander and can, because of their low, slow flight characteristics, provide the kind of refined mine-laying capability which the ground forces need.

In order to win a war of mobility we must not only plan for maximum mobility ourselves, but must restrict and discourage the enemy's ability and will to move. Minefields selectively positioned and carefully marked and recorded will slow down and demoralize the enemy. The new mines themselves, plus new planting, breaching and clearing techniques and equipment, will help us to fight this kind of war.

Mine warfare is an effective weapon. The Communist armies appreciate its importance and from all indications plan to make wide use of mines. Now, more than ever, it is important for us to develop a familiarity with and confidence in mine warfare.



INFANTRY QUIZ

Answer the following questions. Determine whether you are a Bolo, Recruit, Marksman, Sharpshooter or Expert. Each of the questions is worth 10 points.

1. Before a 106mm rifle is fired, a triangular-shaped area behind the weapon should be cleared for a distance of:
   a. 50 feet.
   b. 80 feet.
   c. 130 feet.
   d. 175 feet.

2. How many and what types of aircraft are assigned to the Infantry division (ROCID)?

3. The standard field survey instrument authorized the rifle company for indicating the presence of radiation is the:
   a. ion chamber.
   b. pocket dosimeter.
   c. G–M meter.
   d. charger, radiac meter.

4. A soldier has mastered the fundamentals of marksmanship taught in preparatory marksmanship and 25-meter Trainfire I firing when he is able to:
   a. assume positions rapidly.
   b. obtain a battlesight zero.
   c. shoot tight shot groups.
   d. apply proper trigger control.

5. In airmobile operations, the primary mission of the Pathfinder is to:
   a. aid in the navigation and control of Army aircraft.
   b. operate air traffic control centers.
   c. select and prepare airfields.
   d. advise the commander on employment of aircraft.

6. When the rate of fire of the caliber .30 machinegun is not specified in the fire command, it should be:
   a. rapid.
   b. medium.
   c. slow.
   d. any of the above.

7. The maximum sight setting on the machinegun, M60, is:
   a. 2400 yards.
   b. 1200 yards.
   c. 2000 meters.
   d. 1100 meters.

8. In determining the exact allowable cargo load of transport helicopters for a specific airmobile operation, the supported ground unit commander should consult:
   a. FM 57–35, "Army Transport Aviation Combat Operation."
   b. the transport aviation unit representative.
   c. the aircraft handbook.
   d. the division aviation officer.

9. Incorrect sight alignment causes an error in the strike of the bullet which:
   a. remains constant as range increases.
   b. increases as range increases.
   c. is negligible.
   d. none of the above.

10. A phase line in a night attack is used primarily as a control measure to:
   a. designate the exact location for consolidation once the objective has been seized.
   b. ensure that the attacking troops have deployed as skirmishers prior to launching the assault on the objective.
   c. keep friendly attacking troops out of the supporting fires beyond this line, and to aid control after seizure of the objective.
   d. indicate a physical location on the ground for employment of the automatic and crew-served weapons of the rifle platoon.

How t

by Maj Clifford H. Ford
and Capt Harold J. Meyer

THE ADAGE "For want of a nail the shoe was lost . . ." is well known to most commanders. And it applies to the weapons of the rifle company. The success of the company mission and the lives of company members are dependent on the serviceability and correct functioning of its weapons.

Now, more than ever before, our tactical units throughout the world must maintain a high state of combat readiness. To be combat ready, their weapons must be continually serviceable. And to ensure that all weapons are ready to fire, each rifle company commander must wisely use his inspection time. Each inspection, whether announced or "on the spur of the moment," should be made to determine what the condition of the weapons is, whether repairs or adjustments are required, and what measures are necessary to maintain serviceability.

The rifle company commander usually performs inspections that are visual and non-technical. He does not ordinarily have gauges, mirrors and other devices to assist him. Yet for ensuring a weapon's serviceability, a visual inspection, supplemented by a few operational checks, is normally adequate.

During visual inspections, certain essentials should be looked for, such as proper lubrication, cleanliness, nature of surfaces, and completeness of unts. The commander should, when inspecting the bores of weapons, ensure that no unusual pitting, rusting, heavy scoring, gouging or burring has occurred. Dirt, rust and corrosion, whether in a bore, in a gas system or around a tiny screw, must always be the objects of special scrutiny. And each inspection should check related webbing equipment and accessories as well as proper assembly. Also a visual inspection will reveal worn or broken parts and other major deficiencies caused by abuse or lack of proper care.

After it has first been determined that the weapon is loaded, operational serviceability checks to include safeties, sights, control levers and other assembles should be made. These operational checks and visual inspections will give the commander reasonable assurance that

One of the commander's most important responsibilities is making sure that his unit's weapons are ready to fire.
Good command inspections result from knowing what to look for.

Inspect Rifle Company Weapons

his weapons are serviceable. But even after following the recommended inspection procedures and implementing corrective action, he cannot be absolutely sure that the weapon will operate properly. The final test of serviceability for all weapons is, of course, actual firing. But, since test firing is sometimes impractical, weapons must be frequently inspected to ensure insofar as possible that they will be ready to fire when needed.

The importance of timely and thorough visual inspections and operational checks has been proved by the experience of commanders throughout the years.

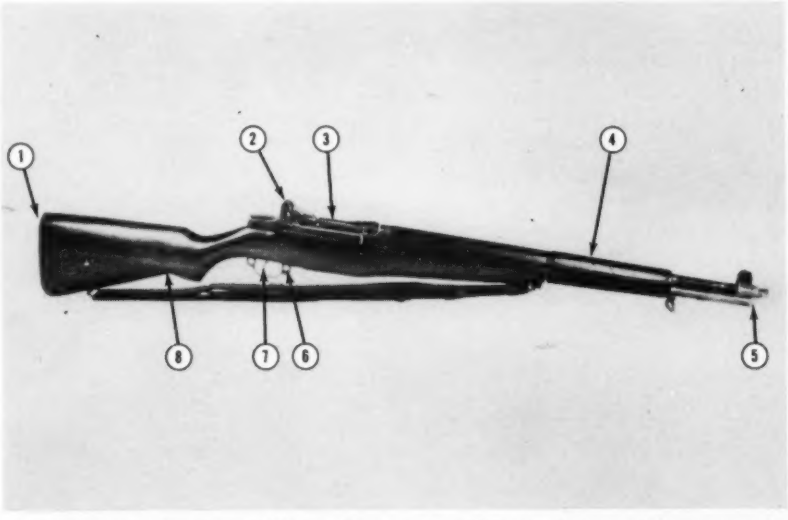
A long familiar subject of such inspections is the .30 caliber M1 rifle. It is true that latest draft revisions of current TOEs do not include the M1 rifle. In its place is listed the new 7.62mm M14 rifle. But we can safely assume that phase-in of the M14 rifle will be gradual, and the well known M1 will be with us for some time.

The commander, during his inspection of the M1 rifle, should test it for correct assembly. With the operating rod in its rearmost position, the bolt should stay open. Close the bolt, lock the safety, and squeeze the trigger. The hammer should not fall. With the safety off, a squeeze of the trigger should cause the hammer to fall.

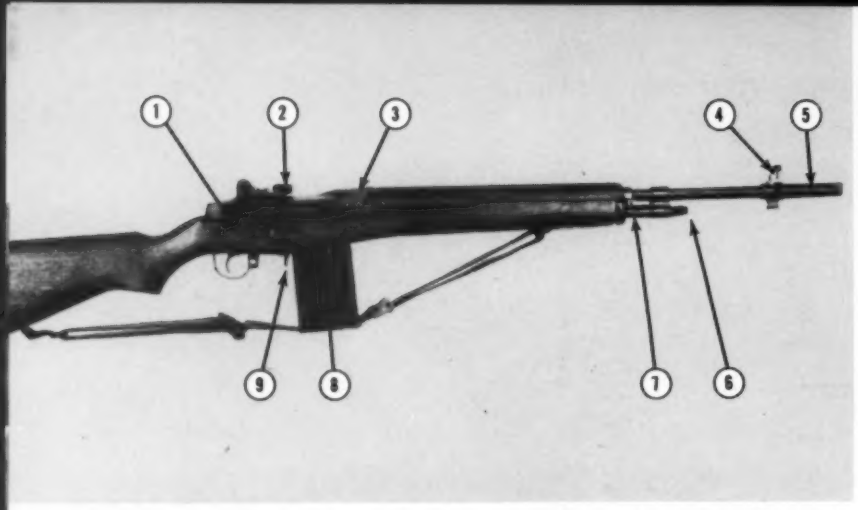
Trigger pull can be checked by judging if it is dangerously less or excessively greater than the 5½ to 7½-pound desirable range. While inspecting the receiver, the commander should ensure that the chamber is clean. And the rear sight deserves special attention. If sharp, clear clicks cannot be heard when the elevating knob is turned, the rear sight should be checked for proper tension. This can be done by running the aperture up to its topmost position and pressing down on it with the thumb. If the aperture drops, the tension must be adjusted. Then examine the eight checkpoints shown in the figure.

Experience has proved that more rifles become unserviceable through lack of maintenance than for any other reason. Because of this, accessories essential to the performance of proper maintenance are issued for use with the rifle. Some commanders prefer that accessories such as the oiler and thong case, the grease container, and the M10 cleaning rod should not be carried in the rifle stock. However, it is recommended that these items always be kept in the stock since their presence will permit, and perhaps even encourage, better rifle maintenance. Technology has not ruled out the need for maintenance. Care and cleaning, so important for the M1, is as necessary for the recently introduced M14 rifle.

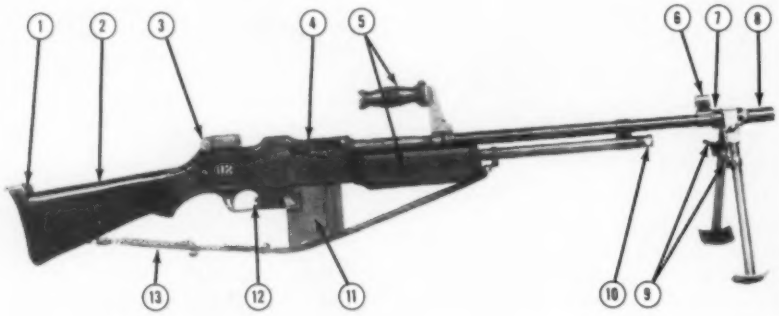
Although the 7.62mm M14 rifle has not been issued to most units, it will have an important role in future weapons inspections. The inspection procedure for the M14 is not radically different from that for the M1, but the box-type magazine and the selec-



U.S. Rifle, M1, Caliber .30. ① Butt-plate cap door fails to close properly—accessories missing; ② Rear sight loose, lacks tension or fails to produce audible clicks when elevation knob is turned; ③ Extractor, ejector or firing pin broken or missing (move bolt to rear to examine); ④ Front handguard loose; ⑤ Gas cylinder lock screw loose or missing; ⑥ Safety fails to function; ⑦ Incorrect trigger pull; ⑧ Stock cracked.



U.S. Rifle M14, 7.62mm. ① Inoperative selector (applicable only to those rifles having selector installed); ② Battered magazine charger guide; ③ Frozen or missing bolt roller (inside hump of operating rod); ④ Loose front sight; ⑤ Loose or broken flash suppressor; ⑥ Loose or improperly seated gas cylinder plug; ⑦ Improperly adjusted gas shutoff valve; ⑧ Defective magazine; ⑨ Inoperative magazine latch.



Automatic Rifle, M1918A2, Caliber .30. ① Hinged butt plate loose; ② Warped or broken stock; ③ Loose sight or binding elevating screw; ④ Worn or broken extractor, ejector or firing pin (cock weapon to examine); ⑤ Broken carrying handle or forearm; ⑥ Loose sight or cover; ⑦ Missing friction washer; ⑧ Loose or split flash hider; ⑨ Wing nuts fail to lock adjustable legs when tightened; ⑩ Gas cylinder assembly improperly aligned; ⑪ Defective magazine; ⑫ Faulty magazine release; ⑬ Unserviceable sling.

tive semi-automatic and automatic capability of the former make additional inspection necessary.

To test for correct assembly, with an empty magazine properly engaged in the receiver pull the operating rod to its rearmost position. The bolt should stay open. If it does not, either the bolt lock or the magazine follower is faulty. Remove the magazine and the bolt should still remain open. If it does not, the bolt lock is almost certain to be defective. Next, pull the operating rod slightly to the rear to release the bolt lock, close the bolt, move the safety to its locked position and squeeze the trigger. The hammer should not fall. After releasing the safety and squeezing the trigger, the hammer should fall.

With the magazine out, again pull the operating rod to the rear. This time the bolt should not remain open unless the bolt lock is pressed in. Now allow the bolt to go forward.

Next, examine the gas cylinder plug. This plug should be tight, with its shoulder flush against the gas cylinder lock. If it is tight but the shoulder is not flush with the gas cylinder lock, either the threads on the gas cylinder plug are damaged or the gas piston has been placed in the gas cylinder incorrectly.

A final point in checking for correct assembly is the gas shut-off valve located on the right side of the gas cylinder. The notch in the spindle of the shut-off valve must be perpendicular to the barrel before normal firing can occur.

When these tests are completed, remove the magazine and examine it carefully for dents or other damage. While the magazine is out, look into the receiver, operate the magazine latch to be sure it works properly, and examine the operating rod spring guide for excessive wear.

Next move the selector, if present, to each of its firing positions. If it lacks spring tension or moves with difficulty, check for a broken or missing selector spring. Then look for the same type of discrepancies which were pointed out in the figure covering the M1 rifle, and also check for the additional faults peculiar to the M14 rifle shown in the separate figure devoted to that weapon.

With the advent of the M14, the commander's inspection burden will be lightened somewhat, since a version of this weapon will replace the well-known Browning automatic rifle. Until the changeover is accomplished, however, BAR inspections must continue.

With the BAR, a defective magazine and a worn or broken magazine catch or spring are probably the most frequent causes of failure to feed or failure to chamber. Failure to fire often comes from a weak recoil spring, or from a worn or broken firing pin. And stoppages caused by failure to extract and failure to eject are commonly due to insufficient gas or a damaged or broken extractor or ejector.

Worn or broken parts are not the only cause of improper functioning. Incorrect assembly will cause difficulties. When inspecting a BAR, the commander should first cock the weapon, then check the safety, and finally release the safety and squeeze the trigger. If the bolt moves com-

pletely forward and locks into position, it is reasonable to assume that the operating and trigger groups are assembled correctly. The buffer and rate reducing group can be checked only by disassembly or test firing. However, the gas cylinder assembly and the bipod group can usually be visually inspected. When the gas cylinder body is positioned so that the body lock key is directly under the barrel of the weapon, the gas cylinder assembly is correctly aligned. After these assembly checks have been made, the commander is ready to inspect the points shown in the figure.

Along with the Browning automatic rifle, the .30 caliber M2 carbine is not included in the latest draft revisions of current TOEs. But the carbine will no doubt remain a member of our small arms system for a while.

During an inspection of the carbine, the commander should make a series of operational checks to find out if the weapon is properly assembled and safe to fire.

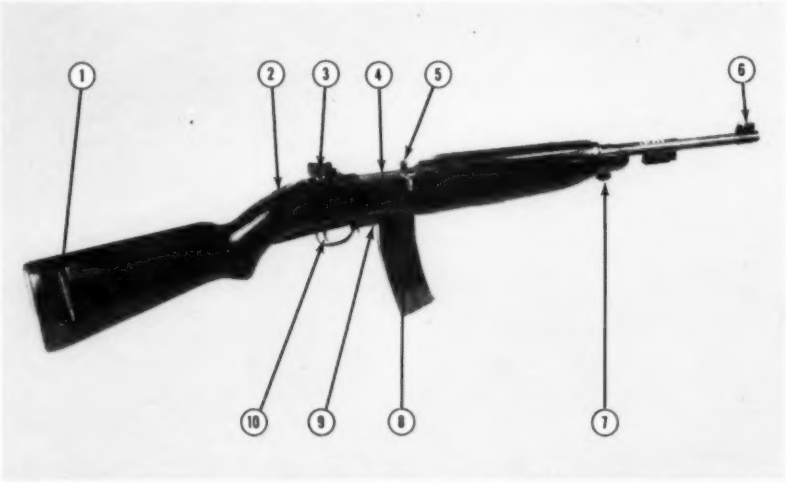
First pull the operating slide to the rear and depress the operating slide stop. The bolt should remain open. If it doesn't, either the operating slide stop or operating slide stop notch in the receiver is defective. Next, with the safety pointing to the rear, pull and release the trigger several times. The trigger should spring forward each time it is released. If it does not, it is likely that the trigger spring is improperly installed, and to fire the carbine in this condition would be extremely dangerous.

With the selector to the rear in the semi-automatic position, and the trigger released, pull the operating slide all the way to the rear and allow it to snap forward. The hammer should not fall. Pull the trigger and the hammer should fall. Next hold the trigger to the rear, pull the operating slide all the way back and allow it to snap forward. The hammer should not fall until the trigger is released and squeezed again. Perform this test several times. After this check, pull the operating slide completely to the rear and allow it to go forward.

Now push the selector to the automatic position. The hammer should not fall until the trigger is pulled. Next, holding the trigger to the rear, pull the operating slide to the rear and release it. Perform this operation several times. Release the trigger and squeeze. The hammer should not fall.

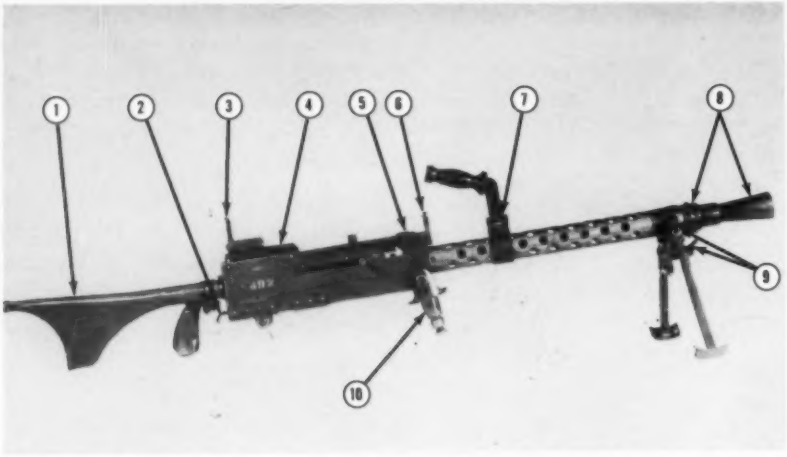
With the selector still in the automatic position, pull the operating slide to the rear, hold the trigger back and allow the slide to go forward slowly. The hammer should fall just as the operating slide moves the last $\frac{5}{16}$ inch. If it falls before the bolt is fully locked, the weapon is defective.

As a final operational check, test the safety with the selector in each position. The figure shows other points which should be checked as soon as you are sure the carbine is correctly assembled and is operationally safe.

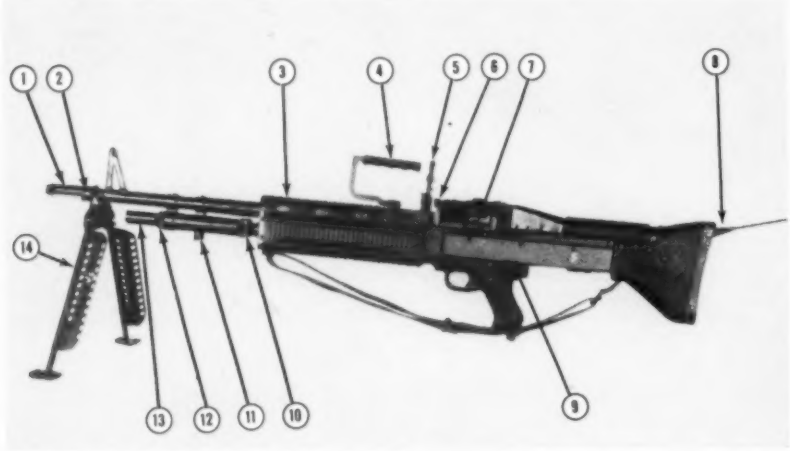


Carbine, M2, Caliber .30. ① Oiler or sling missing; ② Recoil plate screw loose; ③ Rear sight windage knob binds, elevation slide fails to properly engage range indentations on ramp; ④ Extractor, ejector or firing pin broken or missing (open bolt to examine); ⑤ Selector lacks spring tension; ⑥ Front sight loose; ⑦ Front band screw not tight; ⑧ Magazine dented or otherwise damaged; ⑨ Magazine catch inoperative; ⑩ Trigger pull excessively heavy or light.

Pistol, M1911A1, Caliber .45. ① Sights burred or otherwise damaged; ② Worn or broken firing pin; broken or missing extractor; worn or broken ejector (move slide to rear to examine); ③ Weak or broken firing pin spring; ④ Deformed magazine lips or magazine follower; ⑤ Dented or battered magazine; ⑥ Weak or broken magazine spring; ⑦ Cracked or broken stocks; ⑧ Inoperative magazine catch and release.



Machinegun, M1919A6, Caliber .30. ① Bent shoulder stock; ② Wing nut loose or missing, screw threads stripped; ③ Rear sight loose, windage screw knob or elevation knob binding; illegible sight graduations; ④ Cover latch inoperative; ⑤ Cover bolt cotter key missing, cover bolt spring broken; ⑥ Front sight assembly incomplete, fails to raise, lower, or lock in upright position, adjusting nut binding; ⑦ Carrying handle retaining pin loose; ⑧ Flash hider loose, retaining clip missing; ⑨ Thumb screws damaged, fail to tighten; ⑩ Pintle battered, cotter key missing from pintle bolt.



Machinegun, M60, 7.62mm. ① Loose flash suppressor; ② Broken bipod yoke; ③ Barrel guard mashed; ④ Broken carrying handle; ⑤ Loose rear sight, binding traversing or elevating knob, defective slide release, loose or missing range plate screws, illegible graduation marks; ⑥ Cover latch spring weak or broken; ⑦ Sticking feed plate rollers; ⑧ Hinged butt plate difficult to open and close; ⑨ Safety fails to function; ⑩ Rear gas cylinder nut loose, washer tabs or tab recesses worn or damaged; ⑪ Gas plug loose or missing; ⑫ Gas cylinder extension lock washer tabs worn, broken or bent, tab recesses worn or damaged; ⑬ Gas cylinder extension loose; ⑭ Bipod legs fail to position properly.

Although warfare has become characterized by increased firepower, and weapons like the carbine are being replaced, the faithful caliber .45 pistol remains on our armament scene. Future ammunition improvements may enhance the effectiveness of this weapon. Most of the irregularities common to the caliber .45 pistol are shown in the figure. However, prior to checking these items the commander should check for correct functioning of the safety lock, the disconnector, the grip safety and the half-cock feature of the hammer.

To check the safety lock, cock the hammer, press the safety lock upward into the "safe" position and, while depressing the grip safety, squeeze the trigger. The hammer should not fall.

To test the grip safety, cock the hammer, release the safety lock and, being careful not to depress the grip safety, point the pistol downward and squeeze the trigger. If the hammer falls or if the grip safety is depressed by its own weight, corrective measures are required.

The half-cock feature can be tested by half-cocking the hammer and pulling the trigger. The hammer should not fall. And too, when the hammer has been drawn back nearly to full cock and let slip, it should fall only to the half-cock position.

To determine if the disconnector functions properly, cock the hammer, shove the slide about ¼ inch to the rear and, while holding the slide in position, squeeze the trigger. Allow the slide to go forward while maintaining pressure on the trigger. If the hammer falls, the disconnector is faulty. For one final test, pull the slide all the way to the rear and engage the slide stop. Squeeze the trigger and at the same time release the slide. Again the hammer should not fall.

Trigger pull should also be tested to determine if it is excessively heavy or dangerously light.

A common source of malfunctions of the .45 caliber pistol is the magazine. It is easily dented or bent, and may fail to seat properly if the magazine catch is broken or worn.

Although the .45 caliber pistol is still with us, the Browning .30 caliber machinegun, veteran of over 40 years of service, is going to be retired. The Department of the Army has chosen the 7.62mm M60 machinegun to be its successor. However, the M1919A6 machinegun will continue to fill a key operational role during the phase-in period.

Granted, the M1919A6 is rather complicated internally, but it is quite easy to inspect for serviceability. After completing the checks shown in the figure, the commander should give his attention to the interior of the receiver.

Prior to raising the cover, pull the bolt handle to the rear and release it. The forward movement of the bolt should be smooth, rapid and sharp. Raise the trigger and the firing pin

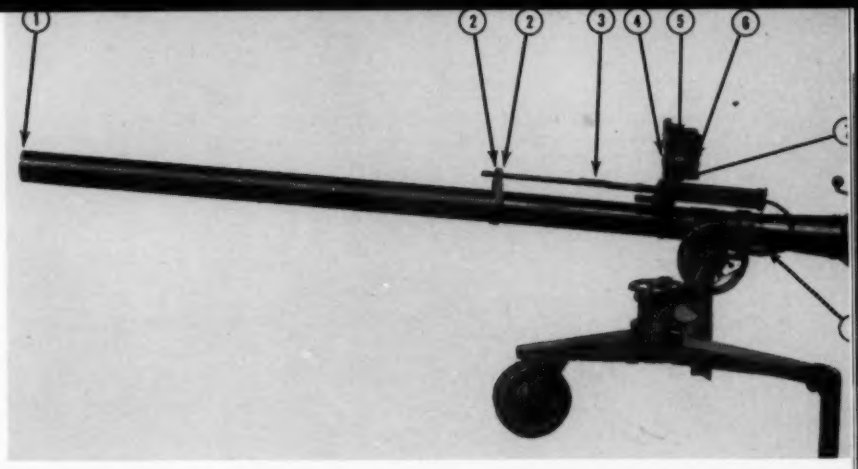
should go forward. This is an indication that the weapon is assembled correctly, but it is not a final operational check. Now raise the cover. Occasionally it is difficult to move the cover latch to the rear to release the cover. This difficulty may be due to a slightly elevated and improperly seated backplate group.

Inspection of the cover should reveal a free-moving belt feed lever, and an undamaged belt feed lever stud. The belt feed pawl and belt holding pawl should be under spring tension. Now cock the weapon, lift the extractor and raise the trigger. The firing pin should be visible in the T-slot of the bolt. Check the ejector to ensure its spring is not broken.

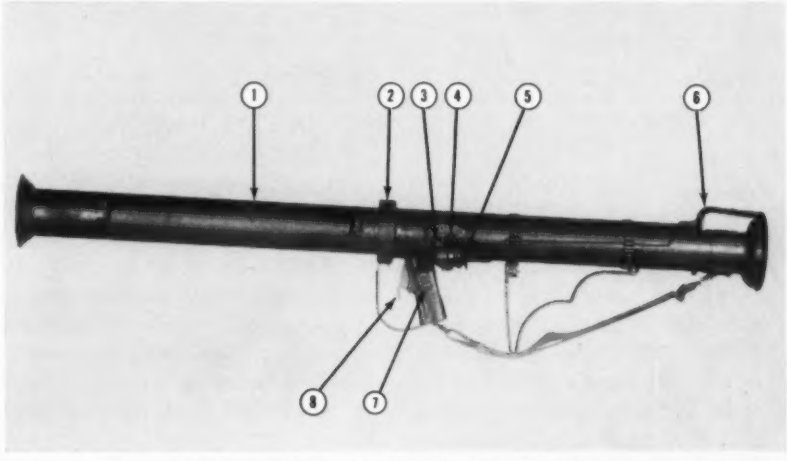
Final head spacing is described in the appropriate field manual. However, tight headspace exists if the notches on the rear of the barrel can be seen. Headspace is loose if the bolt can be pulled to the rear independently of the barrel and barrel extension.

So much for the A6 machinegun. Next, we will outline the inspection procedure for the 7.62mm M60 machinegun. The barrel assembly is easy to inspect. First move the bolt to the rear. Then lift the barrel locking lever and remove the barrel by pulling it to the front, away from the receiver group. The barrel should be examined for a cracked socket. It should be noted that with the M60, no adjustment for headspace is necessary.

An indication that the weapon is in proper mechanical operating condition can be gained by testing the operating group. Pull the cocking lever to the rear and then push it forward. The bolt should remain in its rearmost position since the M60 machinegun is an "open bolt" weapon. With the safety on the "S" position, press the trigger. The bolt should not move forward. Then, with the safety on the "F" position, again press the trigger. The bolt should now snap forward with considerable force. (Caution: Damage to the feed plate will result if the bolt is permitted to snap forward while the barrel is out of the weapon.)



Rifle M40A1, 106mm. ① Broken or gouged lands; ② Adjusting cams fail to lock; ③ Missing wing nut or gas regulator needle; ④ Loose lock screw; ⑤ Boresight screws frozen; ⑥ Broken cross-level bubble vial; ⑦ Cant correction knob inoperative; ⑧ Split or broken firing cables.



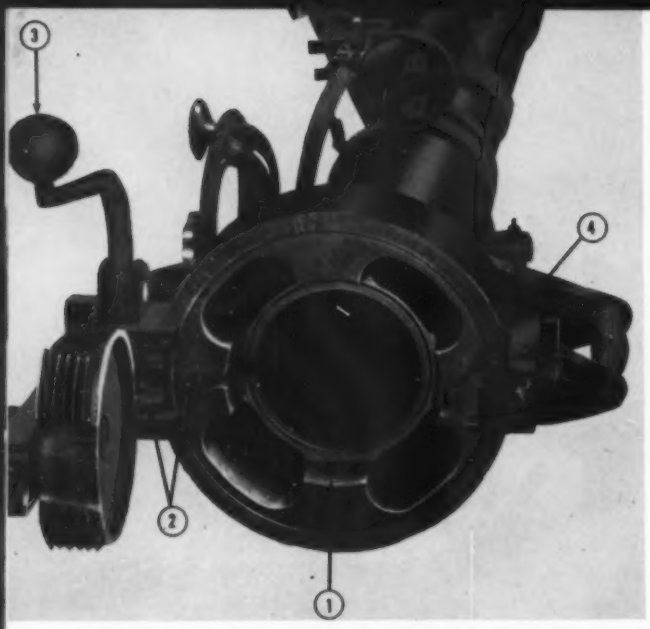
Rocket Launcher, M20A1B1, 3.5-inch. ① Dented or cracked barrel — scored interior; ② Loose barrel coupling; ③ Loose or binding sight hinge; ④ Bent indicator arm; weak indicator arm spring; marred elevation plate; ⑤ Scratched or broken lens; ⑥ Contactor latch group inoperative; ⑦ Safety fails to function; ⑧ Trigger has no spring action.

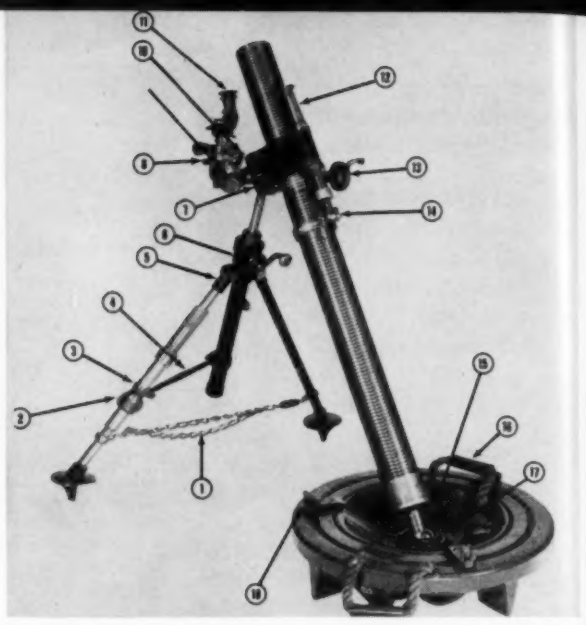
To check the interior of the receiver, raise the feed cover latch and lift the feed cover to its upright position. If the feed plate does not operate smoothly, the feed plate groove is probably rough. Also the bolt guide rails should not be bent or burred. The extractor and ejector should be present and unbroken.

These checks, in addition to those shown in the figure, will provide the commander with a good estimate of the weapon's serviceability.

The machinegun's partner in the weapons squad is the 3.5-inch rocket launcher. Although it presents few maintenance problems, its electrical firing system, unique among weapons of the rifle company, occasionally fails to function. Special equipment is needed to determine its complete operational readiness, but the company commander can obtain a fairly reliable indication of the electrical circuit's condition. To do this, he should check for paint-covered or corroded electrical contacts, loose connections, broken wires, damaged insulation, and broken or damaged trigger grips.

Detailed disassembly of both the firing mechanism and the contactor latch group should be made only by technically trained personnel. However, several back and forth movements of the control handle should





106 mm Rifle Breech. ① Damaged vent bushing threads; ② Lack of spring action in cartridge case detent or extractor; ③ Operating lever fails to work smoothly—loader's safety fails to function; ④ Vent assembly number and breech block number different.

Mortar, M29, 81mm. ① Broken spread chain or spring; ② Locking nut binds or fails to lock; ③ Sliding bracket binds; ④ Cracked or broken connecting rod; ⑤ Binding adjusting nut; ⑥ Loose or binding elevating mechanism; ⑦ Battered dovetail slot; ⑧ Broken elevation or cross-level bubble vials; ⑨ Marred deflection or elevation scales; ⑩ Weak latch spring; ⑪ Scratched or broken lens; ⑫ Inoperative shock absorber; ⑬ Loose or binding traversing mechanism; ⑭ Clevis lock pin missing or improperly inserted —chain missing or broken; ⑮ Spherical projection binds in movable socket cap; ⑯ Unserviceable rope handles; ⑰ Open end of movable socket cap points in wrong direction; ⑱ Broken or bent latch clamping screws.

show the commander the condition of the contactor latch group. When the control handle is moved to the LOAD position, the right and left stops should protrude into the bore and the trip lever should be up. When the control handle is rotated upward to the FIRE position, the stops should come up out of the bore, and the trip lever should rotate downward into the rear of the bore. After determining that the contactor latch group operates correctly, the commander, before proceeding to the items indicated in the figure, should inspect for such obvious defects as bent shoulder stock, loose or damaged trigger guard, frayed carrying strap or poor condition of painted surfaces.

While the 3.5-inch rocket launcher is an effective tank killer at short ranges, the principal anti-tank weapon organic to the rifle company is the 106mm rifle. This rifle consists of four major components: the M79 tripod mount; the 106mm rifle, M40A1; the .50 caliber spotting rifle, M8; and the M34D elbow telescope sight. When conducting an inspection of this weapon, it is a good technique to examine each component individually. The commander can determine the serviceability of the 106-mm rifle by making the simple checks shown in the figures.

With the M79 mount, sluggish movement of parts is often caused by paint that has collected at joints or pivot points. In testing for smooth operation of the traversing and elevating handwheels, normal balance of the weapon should first be achieved by duplicating the effect of having the 106mm rifle loaded. To do this, put your hand on the breech and push down.

During the inspection of the mount, an operational check of the firing knob should be made. A distinct click should be heard when the knob is pulled out, and when the knob is pushed in. Cocking and simulated firing of the spotting rifle and the major caliber will normally disclose any trouble that exists in the firing mechanism. Next check the legs. Improper dismounting from the ¼-ton truck can bend a front leg. This usually occurs just in front of the traversing handwheel.

Maj Clifford H. Ford graduated from OCS at Fort Benning and served with the 103d Infantry Division in Europe during World War II. He left the service in 1946, but was recalled to active duty as Assistant PMST at Mississippi State College in 1951. During 1953 he became air officer for the 25th Infantry Division in Korea. He attended the USAIS Advanced Course in 1957, and now is enrolled in the Associate Course of CGSC.

Capt Harold J. Meyer, author of "Weight—Nemesis of Mobility," enlisted into the Army in 1943 and graduated from OCS in 1945. He served in Europe until 1946, when he left active duty. In 1948 he returned to the active Army. He has served as Assistant PMST at Kent University and is a graduate of the USAIS Advanced Course. Captain Meyer is now Publications Officer with the School's Weapons Department. He is a frequent contributor to *Infantry*.

The inspection of the 106mm rifle should determine that the serial number of the vent bushing is the same as that of the breechblock. Undesirable recoil could occur if a breechblock with a different serial number is substituted. Also examine the Weapons Record Book. Entries in this book should show by lot number and types all service cartridges fired to date in the weapon.

The adjusting cams of the .50 caliber spotting rifle frequently give trouble, due to broken or extremely loose locking lugs. This defect can be discovered by using an M8 combination tool, or two screwdrivers, to turn the cams. If serviceable, the cams will operate smoothly and lock firmly when properly positioned. The magazine of the spotting rifle should not be bent or damaged. And the lens of the M34D elbow telescope should be checked for scratches or breakage. Inspection of these items will help the commander ensure that his principal direct fire weapons are in operational readiness.

While the 106mm rifle has increased the direct fire capability of the rifle company,organic indirect fire support has also been improved with the substitution of the larger 81mm mortar for the 60mm mortar.

Before looking for the specific deficiencies listed in the figure, the commander should make some general visual checks and manipulation tests. Initially he should examine how the mortar is mounted. The bipod legs should be approximately two feet in front of the baseplate, with the spread chain stretched tightly between. The two white etched markings on the barrel should be up and to the rear, with the mount attachment ring approximately midway between. Also, the open end of the socket cap should face in the direction of fire, and the clevis lock pin should be firmly in place, being inserted from left to right.

Next the commander can concentrate on the general condition of the mortar. The externally threaded barrel should have no nicks or gouges or bulges which would prevent its free rotation in the mount attachment ring. The bore must be free of cotton waste or other debris which would foul the firing pin. And the firing pin should be present and in good condition.

Then make a few mechanical checks. Elevate, depress and traverse the mortar several times to determine if the mechanism operates smoothly. Turn the sight knobs to check if they operate smoothly and freely and do not bind. And inspect the shock absorber mechanism by placing your foot on the base plate to steady the mortar and delivering a sharp downward thrust to the top of the barrel at the muzzle. When a downward blow is delivered in the direction of fire, the mortar barrel should move down slightly and spring back to its original position. Movement without any resistance, or the other extreme, sluggish or incomplete movement, suggests a faulty shock absorber.

With the 81mm mortar, as with the other weapons of the rifle company, timely and thorough inspections are imperative. Weapons are basic. Without communication equipment or vehicles the company can still fight if its weapons are ready. Formal inspections and frequent spot checks are a vital part of the commander's job. He must detect and correct. The lives of his men and the accomplishment of the mission hinge on the serviceability of company weapons.

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WE MUST DEFEND AGAINST THE "SILENT" WEAPONS.

the 'B' of CBR

Enemy use of bacteriological warfare is a possibility we may face in any future war!

by Lt Col Walter L. Miller, Jr.

SO MUCH of our attention is focused on nuclear weapons and their dreadful implications that we tend to overlook an equally formidable threat to our security. Only a relatively small handful of people appear to foresee the catastrophe we could face if biological weapons were used against us.

There seems to be a tendency to dismiss this threat—perhaps because biological agents have been used only as "field expedients" in small-scale, isolated incidents in past conflicts. But who can say with any assurance that they will not be used against us in the future? We know that the Soviets are capable of conducting biological warfare on a large scale, and such a weapon would seem to be ideally suited to their purpose. As Maj Gen Marshall Stubbs, Army Chief Chemical Officer, pointed out recently: "We have had ample warning that chemical and biological weapons . . . figure prominently in Soviet planning. We would be more than foolhardy if we did not heed such warning and take whatever measures we consider necessary to our defense." If the Soviets could defeat the Free World with BW —and well they might—they could do so without destroying in a nuclear holocaust the material wealth and resources they seek to control. Certainly, Soviet leaders have no qualms about using any means to achieve their announced goal of world domination.

Many Infantrymen will say that biological warfare is of little concern or significance to the Infantry—it is a strategic weapon. While BW is predominantly strategic, the Infantry must be concerned with it. Not only would Infantrymen themselves become targets and casualties of biological agents, but their food and water supplies would also be affected. Actually, the use of BW agents could have an immediate and very significant bearing on tactical operations. Furthermore, the Infantryman, along with other members of the armed forces, can assist in the detection of these agents, should they be used against us.

To understand the problem clearly, the Infantryman should know exactly what BW is, what kind of agents he may have to face, what effects they could have and what he can do about it if they are used.

Biological warfare is the intentional employment of living disease-producing agents or their toxic derivatives for the purpose of causing illness or death in men, animals or plants. Through the use of such agents, one nation would establish artificial conditions in which disease would incapacitate or kill the population of other nations—civilians as well as the members of military forces—or which would destroy or prevent the growth of the plant life and animals required for food.

The biological agents which might be used include living organisms, toxins (toxic substances derived from living organisms) and vegetable organisms. The enemy could select the agent or combination of agents which would produce the desired effects. One type would produce temporary casualties, another a prolonged or recurring problem, while another would kill. For example, the bacteria which produces Brucellosis would cause serious, non-fatal illness, and plague would cause death. The toxin which produces Botulism would also

Target	Agent	Class	Purpose of Use or Effect
Man	Botulinum Toxin	Toxin	Death.
	Brucellosis	Bacteria	Serious non-fatal casualty.
	Plague	Bacteria	To cause death or serious casualty.
Animal	Anthrax	Bacteria	Death.
	Brucellosis	Bacteria	Serious infection.
	Hoof and Mouth	Virus	Infection requiring disposal.
Crop	Late Blight of Potato	Fungi	Kills plant, rots potato.
	Wheat Rust	Fungi	Affects plants to reduce yield to 10%.
	Rice Blast	Fungi	Affects plants to reduce yield at least 50%.
	Defoliants	Chemical Agent	Discoloration and defoliation (loss of leaves).
	Plant Growth Regulators	Chemical Agent	Dwarf or distort plant, and reduce yield.

Possible BW agents and their effects.

bring death to humans, and the hoof and mouth virus would require the disposal of infected animals. Fungi and chemical agents would kill, dwarf, cause defoliation of or reduce the yield of crops and plants.

In selecting the desired agent or combination of agents, the enemy would determine which type or types would best suit his immediate purpose. A death-producing disease would eliminate the victim. However, one which produced a prolonged illness would require medical supplies and personnel for his care. Against military forces the enemy might be expected to use an agent that would have a rapid effect on the individual's ability to fight.

While science cannot produce new diseases, it can grow strains of disease-producing organisms which can live and infect under field conditions. Maj Gen William M. Creasy, former Chief Chemical Officer, U.S. Army, has pointed out that "disease germs can be tailored to exact military requirements" and that "more than any other form of warfare, biological warfare lends itself to covert use by the enemy."

Detection of biological attack would be difficult. Germs can be introduced and spread subversively. They can be released at night to drift silently with the wind or to be carried by water. Their existence may not become apparent until later, when they have done their job and casualties begin to occur. There are no rapid methods of detection such as we now have to determine the presence of gases and chemical agents.

Defense against biological agents is difficult. They can enter the human or animal body through cuts or other openings in the skin, they can be carried into the stomach with food or water and they can be breathed into the lungs through the nose or mouth.

While there is no real solution to the threat we face, if the enemy uses biological agents there are some things we can do to detect their presence and to protect ourselves against them. The Infantryman should be fully aware of what can be done and he must be ready to assist others with this task at any time.

Within the Army, the Army Medical Service is responsible for obtaining samples and identifying biological agents. The Infantry can expect to be called upon to help with the job of early detection of their employment and in collecting samples. The Infantry soldier must be trained to be alert to any unusual signs or activities which could indicate biological agents are being used. Generally,

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Lt Col Walter L. Miller, Jr., received an ROTC commission in 1939 and in 1941 a Regular Army commission. Now a Chemical Corps officer, Colonel Miller was an Infantryman until 1949. He participated in the airborne phase of the invasion of Europe. Later he was PMST at the University of Maryland. He is a graduate of the Chemical Corps Advance Course, and served in Korea as chemical officer of I Corps. Before his present assignment as a student at the Marine Corps School, Quantico, Virginia, he was chairman of the Chemical Committee of the USAIS Command and Staff Department.

Possible methods of disseminating BW agents.

there will be no sound, light or other immediate evidence of release. Since almost all of the agents are living organisms, they are sensitive to shock and must be released in a manner that will prevent their destruction. The soldier should, therefore, be on the lookout for such signs as shells which explode with greatly reduced charges, releasing sprays of liquids, or for devices with jelly-like materials. If an aircraft sprays an area or if aerosol generators or other suspicious devices are used and there are no immediate effects on personnel, as usually would be the case in a gas attack, he should report the incident so that a check can be made.

To assist with the detection and identification of BW agents, a new filter device has been developed. When germ-laden air or liquid is drawn through a disc, the germs are trapped on a filter. The filter is then placed on a similar disc which contains a food material so that the entrapped germs can grow and multiply. A small sterile container is provided for the "exposed" filter and disc which can be carried in a shirt pocket. Body heat helps to incubate the germs until field identification facilities can be reached. This procedure could determine the presence of germs in a matter of hours. Previous methods require several days.

In preparation for the use of BW, the enemy may use "shots" to immunize their own troops, or they may stockpile or move CBR supplies. They may falsely accuse us of planning to use BW, and then equip their troops with masks and protective clothing, step up CBR training and take other steps preliminary to the use of biological agents. The discovery and reporting of information on such activities could give us some warning. The Infantryman is often in a position to do this. Actually, he did it in Korea. On numerous occasions, marks, training literature and other items were captured or reported, and we were thus alerted to the possibility that the enemy might use BW or other CBR agents.

Protection against BW attack is best achieved by high standards of personal hygiene, physical conditioning and sanitation. Cleanliness is essential in the body's natural defense against disease. Inoculations for some of the suspected agents can also be given to augment natural immunities. If a BW attack is expected or suspected, the mask should be worn. Personnel should shave regularly—a several days' growth of beard could cause the face mask to leak. Open cuts and exposed skin should be covered, and eating and drinking should be delayed until a safe area is reached. Food and water exposed to such an attack should be used only if absolutely necessary, and then only after thorough cooking and boiling. It would be preferable to use food and water from freshly opened containers which have been carefully washed and disinfected. Any individual who appears ill should be examined immediately by medical personnel.

We cannot afford to dismiss lightly the enemy's BW capabilities and the threat which they pose. We must be constantly alert now and on any future battlefield for evidence that biological agents may be used. And we should learn as much as we can about methods of combating BW.

Worth Repeating

"Russia has stated publicly by their Minister of Defense . . . that future wars would differ in size, shape and scope from previous wars. Then he lists what is going to be used: guided missiles, atomic, thermonuclear, chemical and biological weapons."

—Maj Gen William M. Creasy

"Those who understand little or nothing about the nature and characteristics of biological warfare often speak in horrified tones of mysterious new diseases being created to wipe out mankind. This is, of course, pure bunk. The likelihood of creating an entirely new agent of unique virulence or new disease-producing capacity is extremely remote."

—Brig Gen J. H. Rothschild

Get the Family on the Team

Here is how one unit develops high morale and good public relations by taking a personal interest in the soldier and his family.

by Capt William M. Glasgow, Jr.

THE ARMY has become increasingly aware of the need for good public relations, but the need is not often recognized at the lowest levels of command where a personal relationship can and should be developed. Each year, several hundred thousand young Americans enter our Army, many of them from homes which have had little direct contact with the service. Some parents have preconceived fears of military duty for their sons. These people need to discover for themselves that these fears are unfounded. They also need to become acquainted with the role their sons play in their country's defense. A better understanding of the individual's role naturally requires a better understanding of the Army's role and mission.

Upon entering the Army, the new soldier usually is highly motivated. At the same time, he is "anxious" concerning his future, and perhaps a little homesick. His parents, his wife and others share his anxieties and interests. They also miss him.

Aware of the need for better understanding, and seeing an opportunity to develop good will for the Army, Company D, 13th Battalion, 4th Training Regiment, USATC at Fort Knox, instituted a project which is designed to promote better public re-

TRAINING is witnessed by the visiting families.

FACILITIES of all types are open for inspection.

lations. The company recognizes that it is in an ideal position to benefit the men of the unit while at the same time creating favorable impressions of the Army among large numbers of our citizens. This is what it has done.

All new men assigned to D Company are requested to fill out a card giving their name, the names and addresses of their next of kin, and their former occupation. (While the occupation information is not required for the project, it is helpful to the company when specific skills are required.) The company commander then sends a personal letter to each soldier's family or closest relatives. The letter informs them of the soldier's arrival in the unit and invites them to attend a "visitors' week end," scheduled on specified dates approximately five weeks later. The letter also outlines, briefly, the training program at Fort Knox and points out how visits at inconvenient times would interfere with training. It requests that the company commander be contacted concerning any of the soldier's problems that may come to the attention of the folks at home.

Such a letter is helpful in a number of obvious ways. It shows the family that the unit and the Army are really interested in their son. It invites them to come see how he is doing, and it tends to keep down visits at undesirable times. Such a letter is not only good public relations—it is also good leadership.

Enclosed with the letter is a program explaining the three-day visitors' week end. The week end starts on Friday—a normal training day. The visitors may arrive as early as they desire. Smart-looking trainees greet the visitors and guide them to the battalion dayroom where coffee and cake are served from the unit mess. The guides come from the company's drill team, a volunteer unit with high *esprit*. At 1000 hours the early arrivals are given a brief orientation and are then taken on a tour of training areas for the remainder of the morning. As the day progresses, additional groups of visitors are welcomed, briefed and escorted on tours. A company officer or senior noncommissioned officer accompanies each group. He describes all training and points of interest. Transportation for the tours is furnished by post buses.

The first place visited on each tour is the area in which D Company is undergoing training. Upon the arrival of a tour group, the trainees are given a short break so they may meet their families. Following the break, the visitors observe the training for a brief period and then continue the tour which includes visits to other units in phases of training which D Company has undergone or will undergo in the future.

During the tour, both the regimental commander and the chaplain talk with the visitors in small informal groups. They answer any questions the guests may have, and do everything possible to make them feel welcome.

Capt William M. Glasgow, Jr., graduated from OCS in 1945. After assignments at Camp Livingston and Fort McPherson, he served as company commander with the 97th Infantry in the Philippines. Returning to the United States, he joined the 23d Infantry, later accompanying it to Korea as a company commander. Beginning in 1951, Captain Glasgow served in the Office of the Assistant Chief of Staff, G3, Department of the Army. He completed the Advanced Course at Fort Benning in 1954 and was assigned to MAAG to Saudi Arabia. Now a battalion executive officer at USATC, Fort Knox, he is the author of *Exhibition Drills*.

DINING with their soldier in his mess is one of the privileges accorded visitors.

After all tours have been completed, the visitors are shown the color film, "Pentomic Army," which explains the role and missions of the Army. The film helps the civilian to understand the many different types of jobs and skills required in our Army, and enables members of the family to see how their son or husband will fit into one of the required slots.

The trainee eats dinner and supper with his family or relatives in the unit's mess, and Friday night he may spend the evening with them.

On Saturday morning, additional visitors arrive at the company. The morning is devoted to observing the company at dismounted drill, visiting planned demonstrations, and taking an open-house tour of the company area. Many mothers learn for the first time that their sons can make beds, wash dishes, and perform other housekeeping chores. The discipline, orderly procedures, and precision make a deep and favorable impression.

The noon meal provides another opportunity for the soldier and his family to eat together in the unit mess. Most of the mothers are profuse in their compliments on the "chow." The visitors pay for their meals at separate-ration rates and are generally amazed to find out how well the Army feeds for such small cost.

Saturday afternoon is the big time for everyone. The trainee is given a pass and may take off until Sunday night for the rest of the big week end with his family. If desired, reservations for the family are made through the company at one of the post guest houses.

Before the three days are over, an average of 200 guests will have participated in visitors' week end with more than half of them having received the full tour and orientation. Throughout the week end, Company D makes no attempt to paint a "rosy" picture. It explains frankly the need for a thorough and rugged basic training program.

As they leave the company area, most of the visitors make a sincere effort to express their thanks for what many call "the biggest experience of my life."

The program has been so well received that the regimental commander plans to institute it throughout his 17 companies. In a year the program will reach approximately 15,000 individuals—trainees and members of their families. The impact that this project can have in developing good public relations for the Army is tremendous. It is a project that other units might consider.

Keep Abreast of Your Profession

You know that *Infantry* serves as a vital link between you and the Infantry School. To strengthen this established bond and to assist you further in keeping abreast of the latest developments, *Infantry* recommends enrollment in Army Extension Courses.

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You may enroll in any extension course or subcourse provided you have qualifying military background knowledge. However, military and civilian personnel who have a specific military requirement for information covered by certain subcourses may enroll under separate criteria.

Detailed information may be obtained by reading Department of the Army Pamphlet 350-60 and the United States Army Infantry School Extension Course Catalogue. *Infantry* urges you to use the enclosed Department of the Army Form 145 to enroll in the subcourse for which you are qualified.

DO WE NEED AN

by Capt Larry S. Mickel

Centralization is the Answer

A branch is the surest means of integrating Aviation's potential into the total ground effort.

FORECASTING the shape of future wars is a continuing process. Perhaps the most valuable contribution such thought can make is in pointing out deficiencies in our current organization and equipment. We like, for instance, to picture the aerial vehicle as deploying hard-hitting troop formations to the farthest reaches of the battlefield with unparalled speed. Such thoughts are healthy and stimulating, but they conceal the simple fact that Army Aviation as organized today cannot achieve these mobility goals. An examination of the facts is revealing.

Army Aviation is presently organic to seven branches. Each of these branches claims to have definite need for integrated aerial support. Each is vitally interested in its growth and development, but for separate and distinct purposes. This splitting of effort has permitted numerous organizational and operational concepts to arise. These concepts have generally become separated into two schools of thought.

On one hand, we find the service branches—primarily the Transportation Corps—which consider Army Aviation to be logistical in nature and, therefore, subject to control of the services. On the other hand, the combat arms desire an air capability subject to immediate operations and contingent only on the requirements of troop commanders. The service branches' concepts have predominated, presumably because of the status of the Chief of Transportation at Department of the Army level. The Chief of Transportation, directly responsible to Deputy Chief of Staff for Logistics, has no counterpart in the combat arms. Army Regulations dictate the Chief of Transportation's responsibility for doctrine, procedures and techniques relating to aviation, while the combat arms are given a similar mission without equivalent status at the Chief level.

An examination of aviation management shows a confusion of responsibility, though the Director of Army Aviation, within the office of Deputy Chief of Staff for Operations, is responsible for over-all staff supervision and coordination of Army Air effort. Army Regulations dictate that the Commanding General, USCONARC, has specific responsibility toward aviation units and personnel in CONUS, except for activities directly assigned the Chief of Transportation. Yet, the Transportation Corps has identical responsibilities for all transportation units except Army transportation helicopter units. Further, the Chief of Transportation has a responsibility to advise the Army Aviation School on *all* matters relating to aviation—a rather sweeping coverage in view of the functions of aviation which are entirely unrelated to the Transportation Corps mission. Then, the Aviation School represents all seven of the Army Aviation user branches; furthermore, user branch schools represent themselves in matters concerning branch air doctrine.

This muddle closely approximates the situation which existed in the Army Air Corps prior to the establishment of the United States Army Air Force in 1941. From the period 1935 to 1941, the responsibility for air activities in the United States Army was divided between the Air Corps and GHQ Air Force. This responsibility was shared with nine corps areas (later called Service Commands), established on a geographical basis. In theory, GHQ Air Force had operational control, with administrative support the responsibility of the Air Corps, while the Corps Areas assisted both. A result of this divided responsibility was an inadequate system of supply, maintenance and training.

The words of the War Department Special Committee on the Army Air Corps, published on 18 July 1934, are true today. "The normal position of the Air Corps in the administrative organization of the Army should correspond to its functions, (1) as a combat arm . . . and (2) as a procurement and supply service. This was the lesson of experience in the World War and the lesson embodied in the National Defense Act of 1920." In other words, aviation must be accorded a branch status.

Among the problems which branch status would eliminate for Army Aviation is the unusual policy for officer

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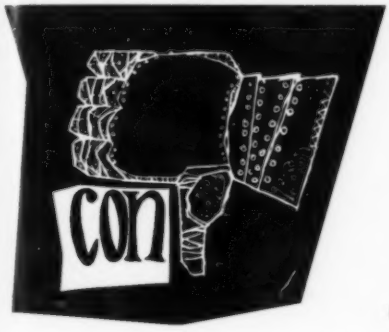
AVIATION BRANCH?



by Capt Roger M. Pezzelle

Not Branch, but Balance

An effective combination of over-all direction and specific ground control means greater combat power.

WITHIN THE Army as a whole, and particularly within Army Aviation itself, there is clear dissatisfaction with the state of Army air. An Army Aviation branch is frequently advanced as an acceptable solution to these difficulties. Proponents of a separate branch organization claim that it would reduce the disproportionate control which the Transportation Corps now exerts over the aviation program, eliminate the problems which have arisen over the "dual proficiency" requirement, and produce better equipped, more responsive, more effective Army air.

It is easy to understand why a separate aviation branch is the favorite suggestion—on superficial view, it seems to solve the immediate problems. As Army men, we automatically react favorably to any proposal that appears to strengthen Army air. Yet the fact is that an aviation branch might eventually complicate existing problems, and might create significant new problems which are too rarely mentioned.

To begin with, an Army air branch would encourage an ambitious expansion of Army air functions in the wrong directions. The mission, "to augment the capability of the Army," is so broad that, given the opportunity, there is little doubt that vast programs of research and development, independent applications of the air potential and over-refinement of standard methods and equipment would encroach upon the simple capability to "conduct prompt and sustained combat." It's easy to visualize aircraft which are the result of what aviation branch wants rather than what the Army as a whole needs—delicate and overspecialized equipment which is out of place on the battlefield and ill-adapted to it. It is easy to visualize methods and techniques which are the result of aerial convenience rather than ground necessity. The proper missions of Army air require a stark functionalism which is impossible under full branch organization.

Moreover, an air branch would further separate by echelons and physical distance the combat commander from the aircraft which should be operating in close support of his unit. When the Army Air Corps was established as what was in effect a separate branch, the airplane was separated from the ground commander in a somewhat parallel way. In view of the types of aircraft and functions involved, this separation was logical at that time. While the commander received less of the kind of close support that Army Aviation is now striving to provide, the Air Corps itself was left free to perform some major functions for which its equipment was especially designed. Even then, though, it was clear that versatile light aircraft had an important role in close support, and that such aircraft would fulfill this role especially well if placed directly under the control of the ground commander. In 1942, for instance, light aircraft were authorized to the Artillery as aerial observation platforms.

This broad separation by types and functions clarified the role of aircraft in warfare, and contributed to the general efficiency of air support. On the one hand, large, fast, heavily armed aircraft would have strategic and certain tactical functions, and on the other small, slow, lightly armed or unarmed aircraft would have only immediate tactical functions. By establishing an Army Aviation branch we would be destroying this useful specialization which has developed as a result of the original separation. By repeating the original separation we would only be confusing it, and we would be seriously impairing the capabilities for close support that now exist.

Only very recently the regimental commander had organic to his unit—and therefore immediately responsive to his commands—two light aircraft. Now he has none. At a time when close air support has assumed great importance for reconnaissance, command and liaison transport, delivery of troops and supplies and, in some cases, as a weapons platform, we have made that kind of support less available. Even the pooling concept, which resulted from the great and various demands made upon Army Aviation, is a step in the wrong direction, simply because the ground commander has had to "beg" for whatever air

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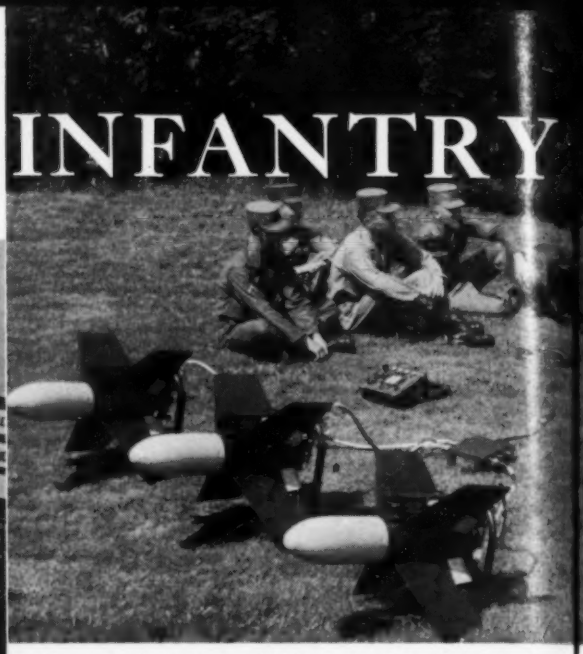
The Changing Face of The INFANTRY

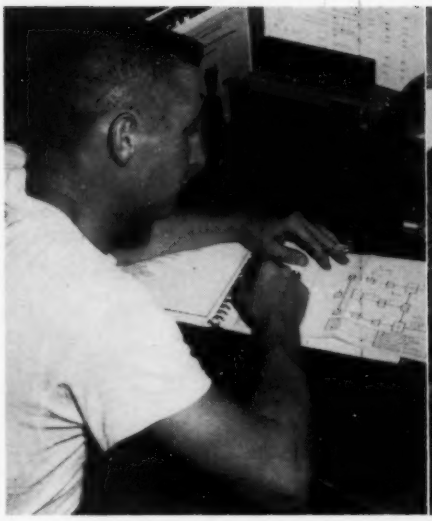


Above. Students at the USAIS Antitank Guided Missile Specialist Course are learning about Infantry's French-designed SS10. Here, they are oriented on ground launching. The missile is shown mounted on its zero-length launcher.

Left. A foundation for practical exercises is laid in the classroom. Among the topics discussed is the SS10 warhead. The missile is not only effective against armor but also against any point target, and the type of warhead employed varies with the target taken under fire.

The Cinetir training device develops accuracy. It projects a realistic target film while the student gunner, using the standard SS10 control and sighting apparatus, guides a white dot which represents the missile tail-flare in on target.

Informal chats, which contribute t
the student's grasp of "fine points
are evidence of high esprit.



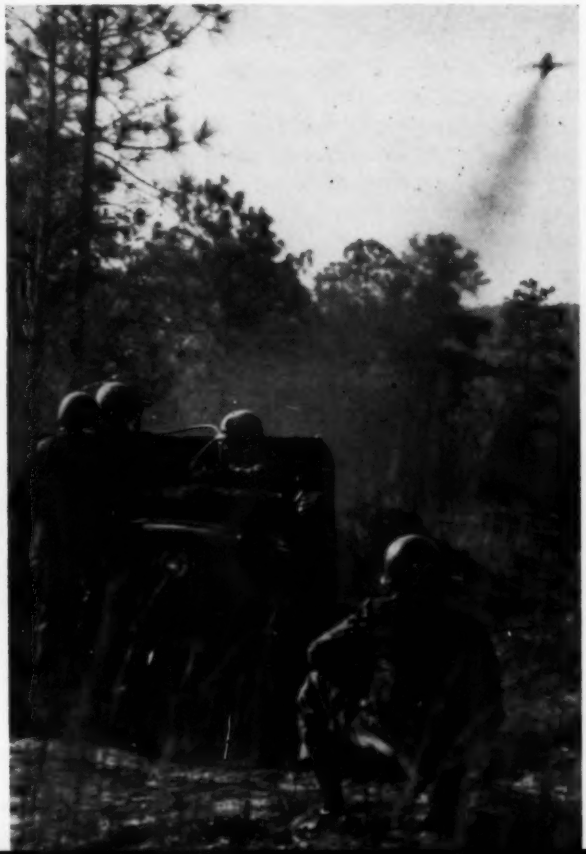
Left. Hard study is as necessary as practical experience. Students regularly "hole up" with their manuals, for instructors demand a high degree of initiative and technical competence. **Right.** The Simulator is another training device. It teaches the student to guide the SS10 flare on its scope.

THE INFANTRY is still the main element of our ground fighting force, and as such its mission is unchanged —to close with the enemy and destroy him. But the equipment and organization of the Infantry have undergone important changes since World War II. The Infantrymen pictured on these pages—students at the Infantry School's Missile Specialist Course—are representative of these changes. The lethal SS10 antitank guided missile which they are learning to handle marks an important application of missile power to the ground battle, and opens up vast possibilities in the refinement of electronic weaponry for Infantry use.

The vehicle-mounted SS10 gets its share of attention. Crew drill teaches precision and teamwork in mounting and firing missiles when the jeep is the launch platform.

Launch procedures get careful emphasis as students apply a checklist printed in the circuit-tester cover. The circuit-tester checks for malfunctions and control.

The pay-off: Benning students will join crews like this to provide an antitank missile wallop for frontline Infantrymen.



Part Two

DEATH TO THE TA

The guided missiles of the new assault weapon platoon pack a lethal wallop that gives the battle group a powerful organic antitank capability.

by Lt Col Walter F. Nechey

THE ASSAULT weapon platoon, a part of the combat support company of the newly reorganized battle group, is a further step in the Infantry's continuing development of antitank strength. Self sufficient in transportation and strong in communication equipment, the platoon needs only intelligent employment and an understanding of its potential to provide the commander with a significant increase in antitank firepower. The present armament of the platoon, the SS10, is unique among our Infantry weapons. Conceived by the French in 1945 and brought to an effective development stage in 1956, the SS10 was troop-tested and adopted by the United States Infantry in 1958.

This relatively lightweight weapon —the missile itself weighs 33 pounds and the launch platform 15—is capable of defeating any known armor. It is equipped with an instantaneous inertia fuse and is propelled at speeds near 180 miles per hour by a two-stage solid-propellent motor. Insignificant backblast or flash coupled with a remote guidance system makes the missile almost invulnerable to enemy counteraction. Electrical impulses, originating in a single control stick, are transmitted to the missile during flight by wire laid from bobbins within the missile body. The guidance equipment has proved satisfactory, withstanding even abnormal treatment. However, tactical use has shown that two complete guidance sets per squad would increase flexibility of employment. With two sets the squad could operate from two locations and in both the ground mount and vehicle role simultaneously.

The missile's maximum range from launch platform to target is 1600 meters. The minimum feasible range is 450 meters and is a function of gunner reaction time—he must gain control of the missile, bring it into the gunner target line and then direct it into his target. At ranges less than 800 meters the gunner will normally observe and fly the missile without optical help. However, at greater ranges a pair of binoculars mounted near the control stick increase hit probability.

The assault weapon platoon is composed of a platoon headquarters and five launching squads. The platoon's transportation consists of seven ¼-ton trucks and five ¾-ton trucks and trailers. The ¼-ton's are assigned one each to the platoon leader, the platoon sergeant and the five squads. The ¾-ton trucks and trailers are assigned to the squads. The basic load for each squad is twenty-five missiles and is divided so that three missiles are carried in the launch racks of the squad's launching vehicle, fourteen on each squad's ¾-ton truck and trailer, and eight in the battle group trains. The ¾-ton trucks are utilized by the platoon sergeant in his resupply role. Normally, the trailers are left near the launch sites while the trucks displace

ETANK!

to the rear for supplies. Should the launch vehicles then displace they may be used temporarily to tow the trailers.

Since the platoon must depend primarily on other units for reconnaissance it has been well equipped for communication. There are seven AN/PRC–10 radios organic and these allow the platoon leader, the platoon sergeant and the squads to operate in the platoon net. In addition, the platoon leader operates an AN/GRC–18 in the battle group command net and the platoon sergeant an AN/GRC–18 in the battle group administrative net. A wire capability has been provided but the platoon's inherent mobility limits its use. However, if time permits, wire will be laid by battle group to the platoon CP or, if the squads are attached, they will enter the wire system of the supported unit.

The wide frontages and numerous tank approaches which normally characterize the defense will dictate a role of attachment for the squads of the missile platoon. Whether the platoon is employed laterally or in depth, its assigned task must be the result of careful study by the platoon leader, the battle group staff and the commander. Naturally, position areas selected must take into account the over-all situation to include: blocking and switch positions, directions and areas of most likely avenues of approach, assumed penetrations and counterattack plans. Consideration must also be given the positions to be occupied by tanks operating in the battle group's zone.

In the deliberate defense the missile squads are normally attached to the rifle company manning the COPL until the COPL is withdrawn. The squads then return to pre-prepared position which should be sited to make full use of the missile's "remote" launch capability. A position with excellent observation may be occupied by the gunner, and the missiles located as much as 100 meters away. Wire communication is established between the gunner and the

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Lt Col Walter F. Nechey received his commission in 1942 under the CMTC program. During World War II he was a platoon leader and company commander with the 26th Infantry in Europe. After attending the Armor School, he served as headquarters commandant with the 26th Infantry in Germany. He graduated from the USAIS Advanced Course in 1952 and was then advisor to the 11th Infantry of the Pennsylvania National Guard. He served as a senior advisor with the Korean Military Advisory Group beginning in 1955, and then was assigned to the Infantry School, where he is now Chairman of the Missile Committee, Weapons Department.

The assault weapon platoon. Foreground: platoon headquarters, consisting of radio operator-driver in one ¼-ton truck with trailer, and platoon sergeant and radio operator-driver in the other ¼-ton truck with trailer. Background: five squads (arranged in column), each consisting of gunner and assistant gunner-driver in the ¼-ton launch truck, and squad leader, ammunition bearer and ammunition bearer-driver in the ¾-ton truck.

assistant gunner by means of the two telephones issued as part of the control equipment and the telephone circuit built into the control cable. When the gunner has a target he alerts the assistant gunner who, on command, activates and fires the missile. The gunner, at his OP, then takes command of the missile and flies it into the target. The launch site may thus be completely covered from enemy ground observation and fire, rendering counteraction extremely difficult and inaccurate. Alternate launch positions may be rapidly occupied, thereby increasing the battle group's antitank defense. The alternate positions will be developed to increase defense in depth, to support blocking and switch positions and to facilitate the counterattack.

The gunner, left, prepares to issue the fire command for the vehicle-mounted SS10 to the assistant gunner.

If the battle group is required to conduct a night withdrawal, all or a portion of the platoon may be left with the forces in contact providing illumination is available. Tests have shown that accuracy under illumination, from either flares or searchlight —the gunner tracking the missile by its tail-flare—makes night employment entirely feasible. Should illumination be unavailable the platoon is withdrawn to the new position with the main body. In the daylight withdrawal, assault weapon squads are attached to each company-sized unit left in contact, or, to facilitate control, the platoon may be attached to the covering-force commander.

In the movement to contact, the assault weapon platoon is positioned so that it may be promptly moved to the front, flanks or rear as contact is made or becomes imminent. If tanks are not attached during the movement to contact, one or more missile squads should be attached to the flank guards.

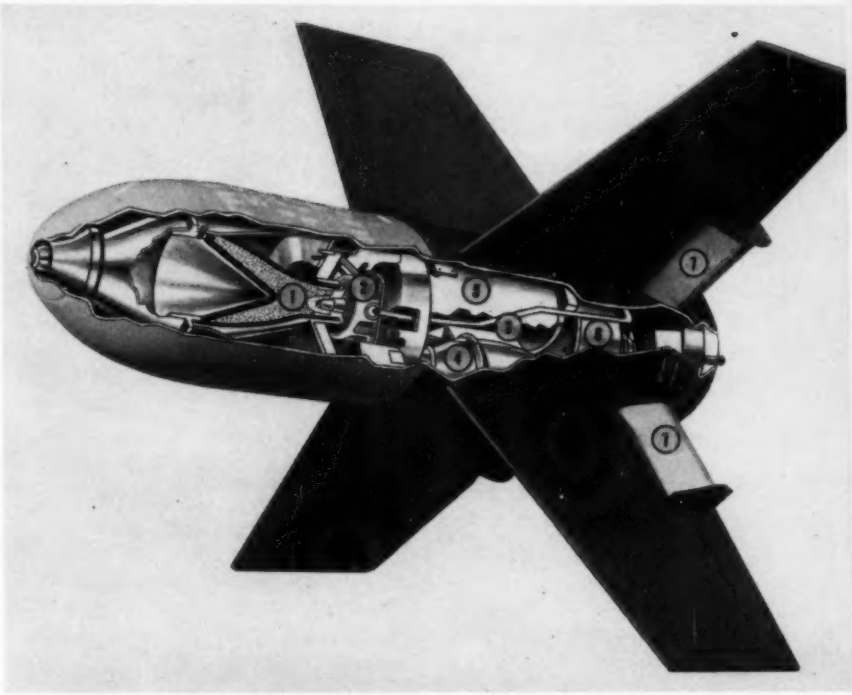
In the meeting engagement or the attack the dual capacity of the SS10 is

Utilizing the "gunner offset" method of employment, the gunner gives his fire command via sound-powered telephone to the assistant gunner at the missile launching position.

valuable. Though the primary warhead is the 105mm HEAT (the numerical designation refers to the diameter of the shaped-charge), there are also the 85mm HEAT-AP (antipersonnel) and the 114mm chemical warheads. These may be effectively used against any point target: bunkers, crew-served weapons or troop formations. From positions on or near the LD the squads may take part in preparatory fires and, once the attack is launched, take under fire targets of opportunity. Though the missile squads will respond to requests from supported units, their primary mission remains antitank fire and this will take precedence over any other fire request. When fires from the initial position are masked, or sooner if commanded, the squads will displace forward to take part in the consolidation of the objective or the continuation of the attack.

When the attack develops into the pursuit or the exploitation, the assault weapons platoon will be employed well forward to ensure early engagement of enemy armor or roadblocks and consequent reduction in their delaying effects. It is essential to remember, however, that the missile jeep is not a tank and must not be used as the point or to draw fire.

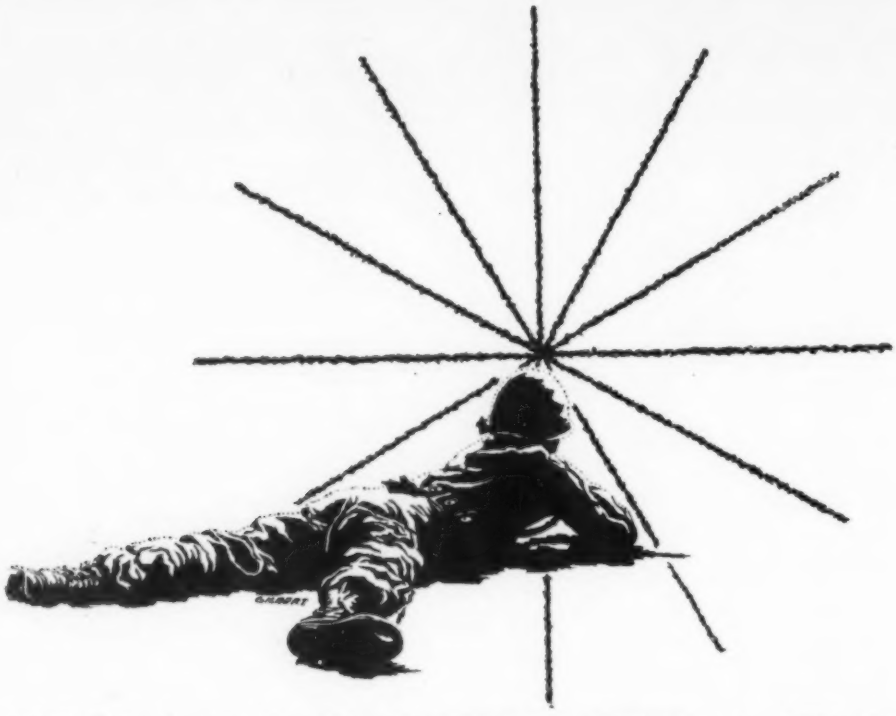
The assault weapon platoon is a valuable adjunct to the battle group's firepower. The light weight of the missile, its remote capability and the platoon's excellent communication combine to form a unit which can be the scourge of the tank. Nevertheless, the platoon has a mobility limitation—caused by the present launch vehicle, the jeep—which must be resolved. One solution, a tracked vehicle, would greatly increase the platoon's mobility and would be in line with Infantry's trend toward greater mechanization. Also, the feasibility of mounting the missile on an air vehicle must continue to receive close scrutiny and test. The point is that no possibility should be overlooked and that nothing must be allowed to stand in the way of complete exploitation of the missile's potential.



Cutaway view of SS10. (1) Shaped charge. (2) Fuse detonator assembly. (3) Arming tube, which arms the fused detonator 3½ seconds after ignition of sustainer motor. (4) One of two bobbins from which wires to launching mount are unreeled in flight. (5) Sustainer motor, which maintains missile speed during flight. (6) Booster motor, which provides initial acceleration. (7) Spoilers, the rate of oscillation of which affects the direction and elevation of the missile.

Helicopter-mounted SS10s combine Infantry's antitank missile firepower with air mobility. The rugged, adaptable SS10 system offers many possibilities of imaginative employment in a variety of roles.

The Infantry has entered the field of missilery with the SS10—a field in which applications such as the Redeye are showing great promise. Now undergoing Ordnance service tests is the SS11, which has added range (3,500 meters) and increased lethality. The SS10, the SS11 and their logical successors represent the packaging for Infantry of tremendous firepower—firepower which will ensure that Infantry remains the decisive force on the battlefield.



SMALLBORE TRAINFIRE I . . . INDOORS

Converting a smallbore range to Trainfire I can mean increased proficiency for your unit on the Army's new standard marksmanship course.

by Maj Walter R. Davis

TRAINFIRE I exercises and field firing normally require the kind of professional layout which is likely to be available only at Regular Army installations. National Guard, Army Reserve and ROTC units are faced with the difficulty of providing Trainfire instruction using facilities grossly inadequate for the unmodified program. Some practical adaptation of Trainfire I for an indoor smallbore range—such as most units of this type have available—is clearly necessary.

The current ATPs and Training Aids Bulletins have offered some suggestions in this direction. "Bustible" targets (or candy wafers which may be used in their place) are offered as one expedient, and scaled-down 25-meter Trainfire half-bull targets as another. In addition, a good training film on Trainfire I is available. Beyond these particulars, little has been done to adapt Trainfire I for indoor ranges.

At Alfred University, Alfred, N.Y., the Department of Military Science and Tactics has introduced some innovations which it believes provide a successful solution to the problem. Doubtless, other Reserve, National Guard or ROTC units have tackled the problem also. The Alfred innovations represent one useful means of Trainfire I adaptation, and are presented as a guide for other units concerned.

Of prime importance in conducting a Trainfire course on a conventional indoor range is the necessity of retaining the integrity of the existing range facilities. Presumably, the range available for employment usually must retain its conventional utility. For the Alfred program, no permanent modification of the range layout or equipment is necessary. The expedients and equipment employed during Trainfire periods do not interrupt or alter the basic char-

acter of the range and they are easily installed and removed.

Another basic problem is the small number of firers which the ordinary indoor range will accept. Military instruction, which commonly involves groups of some size—such as the large freshman basic course ROTC enrollment at Alfred—requires ranges of considerable capacity.

The University has a 50-foot indoor smallbore range with only four firing points, but gets around this severe limitation by conducting Trainfire I and Individual Weapons Training concurrently. Each of the five class-sections is divided into two subsections, each of these containing a maximum of 16 students. Also, since classes are obviously scheduled at differing times, the basic division resulting from the way the ordinary university curriculum is set up goes a long way towards separating the students into manageable groups. Some such separation by time and by concurrent training will probably be necessary for National Guard and Reserve units that plan to send large numbers of men through the course.

In Alfred's particular case one more Trainfire I period is scheduled than is strictly demanded by the number of students, simply to provide a means of accommodating those students who for one reason or another can't attend the period for which they originally are scheduled. The Individual Weapons Training classes can be conducted in larger groups, so that coordination problems are not nearly so great and an extra, overflow period is not needed.

When the 12-hour block of instruction allotted for each subsection is completed, the subsections change over. Instruction therefore totals 24 hours, as compared to the 25 hours prescribed in the ATP for Individual Weapons and Marksmanship. This slight difference is well within the latitude for local modification allowed by the ATP.

Although four orders of four men each for every 50-minute period of firing are necessary in the Alfred program to keep the time schedule within manageable limits, sufficient experience is provided to achieve average-to-excellent proficiency levels in all but a few students. Volunteer remedial firing, conducted during the students' free time, is offered to low performers as they are identified in the scheduled firing periods.

ALFRED TRAINFIRE I
Training Program

Period	Subject	Special Equipment	Hours
1	Introduction to Trainfire I, mechanical training, familiarization firing. Concurrently, MF 21–8797.	Trainfire I half-bull targets scaled for 50-foot range.	1
2	Preparatory marksmanship, sighting and aiming instruction and exercises.	Scaled-down half-bull targets.	1
3	Preparatory marksmanship, dry-firing in prone position, the steady hold.	Scaled-down half-bull targets.	1
4	"Range-firing" for zero. Concurrently, dry-firing exercises.	Scaled-down half-bull targets.	1
5	"Field-firing," unsupported prone position. Concurrently, combat firing positions, the supported kneeling position.	Bustible targets, or candy wafers.	1
6	"Field-firing" with half-bulls, the supported kneeling position. Concurrently, dry-firing with silhouettes, the unsupported squatting position.	Scaled-down half-bull targets, special silhouette targets.	1
7	"Field-firing," unsupported squatting position. Concurrently, dry-firing, unsupported kneeling position.	Special silhouette targets.	1
8	"Field-firing," unsupported kneeling position. Concurrently, dry-firing, standing position.	Special silhouette targets.	1
9	"Field-firing," with fleeting targets. Concurrently, orientation on landscape targets.	Bobbing silhouette targets.	1
10	"Field-firing" to engage disappearing targets. Concurrently, review.	Landscape target panels.	1
11	Proficiency test.	Bustible targets (or candy wafers), bobbing silhouette targets, landscape target panels.	2

Indoor Trainfire I training program devised by Alfred University ROTC instructors.

The 12 hours allotted to indoor Trainfire are divided into 10 periods of one hour and one final period of two hours. This period is occupied with record firing.

Period 1 is the introduction to Trainfire I, designed to familiarize students with Trainfire concepts and to introduce the weapon to be used

at Alfred (the caliber .22 Remington with 6-round clip is preferred to the 5-round Winchester match weapon). Also covered at this time are range safety and techniques of loading, firing and clearing the weapon. Six rounds of free-style, familiarization firing at Trainfire half-bull targets scaled for our 50-foot range follows. Students who are not immediately occupied with firing are shown a training film—MF 21–8797, "Trainfire I."

In Period 2, the Trainfire half-bull is again employed, this time to teach sighting and aiming. In accordance with Trainfire I concepts—which, incidentally, are kept prominently posted on the range—the 6 o'clock hold is eliminated so that the point of aim and the point of intended impact coincide. Practical work employs standard training aids: the sighting and aiming bar, the instructional sighting device which is affixed to the muzzle-end of the rifle, and triangulation equipment.

Since to teach shooting as one integrated act is a major aim of Trainfire I, in Period 3 this "whole" method of instruction is applied to dry firing in the prone position. The student uses the sighting-and-aiming techniques he has learned and is introduced to the several aspects of the "steady hold." The coach-and-pupil method is employed during the exercises.

In Period 4, zeroing is preceded by a discussion of techniques of sight adjustment and pertinent Trainfire concepts, including reasons for zeroing service weapons on the battle-sight setting of 250 meters. As individual zeros are arrived at for particular weapons, they are recorded on a progress envelope issued to each student. His targets are retained in this envelope, and provide the instructor with a continuous means of marksmanship evaluation. This evaluation is not only useful for grading, but also for determining whether remedial action is needed. The student, of course, once he has established his zero, fires the same rifle throughout the program.

ALFRED TRAINFIRE I
Record Firing Exercise, Period II

Target	Rounds	Position	Possible
Bustible or candy wafer.	10	Supported kneeling position (scoring: five hits and five unused rounds).	100
Bobbing silhouette.	5	Kneeling or squatting position (from standing at ready for each round, seven seconds per round).	50
Bobbing silhouette.	5	Standing position (from ready, five seconds per round).	50
Landscape.	4	Supported kneeling.	40
		Total:	240

This record firing exercise comprises Period 11.

The bustible target employed in Period 5 consists of five chocolate candy wafers spot-glued on a sheet of white paper. Two clips of six rounds each are fired in this period, as many as four rounds for zero on the first wafer (aiming at the center of visible mass), leaving at least eight rounds for the remaining four wafers. Hits on each of the five wafers, at 10 points each, are worth a total of 50 points. A maximum of five unused rounds allowed for scoring are, at 10 points each, worth 50 additional points, for a grand total of 100.

Concurrent training during the period covers typical combat firing positions and, particularly, the supported kneeling position to be used in live-firing during the following period. The support is a typical laboratory stool, often employed in indoor ranges as a leaning-rest for relaxation during the conduct of standing-position firing. The stool is tilted off the forward edge of the indoor firing-pad which has been raised by placing a loose 2x4 underneath this edge. Kneeling behind the stool, the firer places the entire left upper arm on the seat of the forward-tilting stool, with the elbow under the weapon,

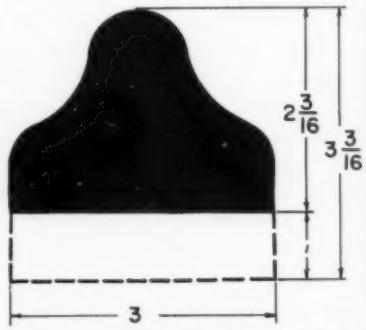


Figure 1. Silhouette target scaled for use on a 50-foot range. Dimensions are in inches.

for a very stable position. Shorter firers may kneel on one of the partially filled sandbags used for the supported prone position. All practical work during this concurrent training again utilizes the coach-and-pupil method.

In Period 6, the supported kneeling position is employed in live-firing at

Maj Walter R. Davis completed OCS in 1943. During World War II he served as an Infantry instructor. After leaving service to teach at the Sewanee Military Academy, he was recalled in 1951 to become a battalion adjutant in the USAIS School Brigade. He served in Hawaii as an instructor and later as a company commander. Returning to CONUS, he became Chief, Officer Personnel Division, in Second Army headquarters. In 1956 he went to Korea as Chief of the Plans Division, Headquarters, Eighth Army. A graduate of the Infantry Advanced Course, Major Davis transferred to the Artillery in 1958 and is now Assistant PMST at Alfred University.

bustible targets. The small-scale silhouette target (Figure 1) is used in concurrent training for dry-firing exercises in the unsupported squatting position. This target includes a "low-hit zone," described by dotted lines. Strikes within the zone are scored as hits to provide parallelism with the richochet-produced hits on the "killable" targets used in the standard Trainfire I program. However, because not all low strikes on the standard course will richochet into the target, strikes within the low-hit zone are scored eight points, while strikes within the black area of the silhouette itself are scored ten.

The unsupported squatting position is employed in live-firing on small-silhouette targets during the next period, while concurrent training is given in the unsupported kneeling position. That position is, in turn, used in Period 8 for live-firing on small-silhouette targets, and concurrently the standing position is introduced.

The Trainfire fleeting-target effect is applied in Period 9 by the employment of bobbing targets in timed-fire exercises. The small-scale silhouette targets are utilized for this purpose but they are mounted in an improvised target-carrier rod to which lateral twist can be applied from the firing line by means of the indoor-range target-carrier pulley lines. Figure 2 illustrates the necessary modification of the standard target carrier for this purpose. The squatting and standing positions are used in this firing. Concurrent training stresses sector of fire and the employment of reference points on the landscape to engage fleeting targets after their disappearance from view.

The final period of the Alfred Trainfire Program utilizes landscape target panels to familiarize the student with this technique of engaging fleeting targets by recall. For each firing point on the range, two identical landscape panels are mounted one in front of the other on a lightweight wooden frame which is attached to the target-sheet clamp on the lower

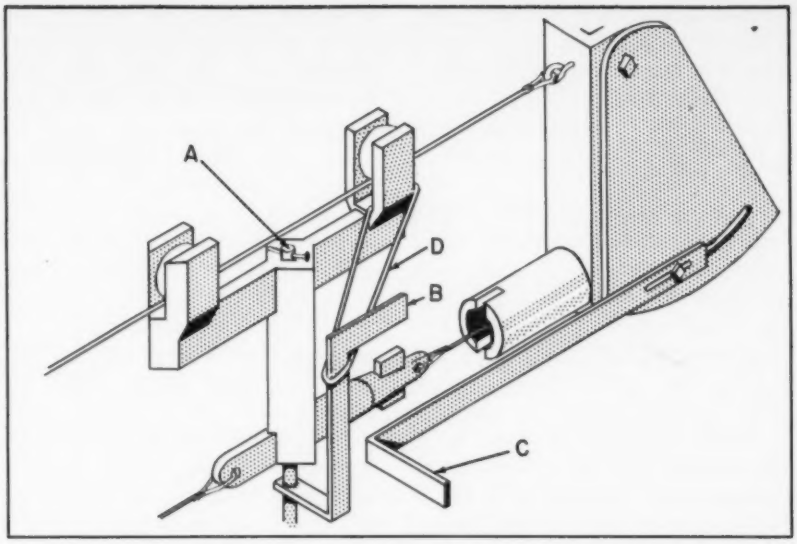
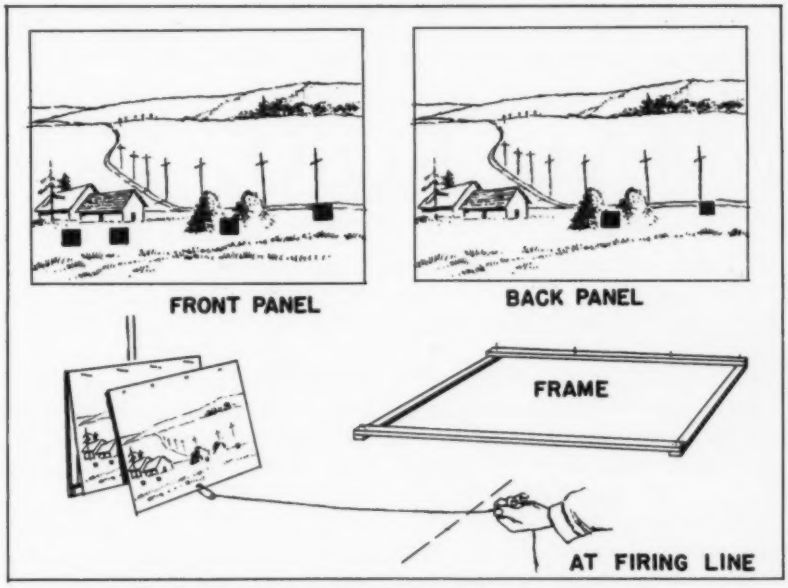


Figure 2. The standard square target carrier rod is replaced by a round carrier rod (A) that will turn freely in the carrier rod slot. The carrier rod operating arm (at B) controls the twist of the target which is clamped at the lower end of the carrier rod. When the target carrier is pulled into the wall bracket, the lever arm (B) is cammed against the extended camming arm (C), twisting the carrier rod to present the target to the firer. The carrier rod twists back into position, with target facing away from the line of sight, by counter-tension of the loop of elastic ribbon (D) when the target carrier is pulled back toward the firing line.



Landscape target panels used to train firers in target recall.

end of the target-carrier rod (Figure 3). Four ordinary target pasters, colored bright orange, mark four separate positions, generally in line, on the front landscape panel to denote the places where four enemy Infantrymen are observed to hit the ground. This front panel is held in place by protruding nail points along the top edge of the target frame, and a string attached to the lower edge of the panel leads back to the firing point. Initially, the pit lights are off. When they are turned on, the live-firing exercise begins. After exposure to the firer for 15 seconds, the front panel is pulled off the target frame by an assistant instructor, and the

firer is confronted by the rear panel, identical to the front panel, except that only one of the pasters appears. This single paster is engaged on the premise that it represents an enemy rifleman who continues to expose himself. Then the firer engages the other three positions, relying on recall and reference points he earlier selected. For scoring purposes, these positions are outlined lightly in pencil, using a template slightly larger than the original pasters. All four targets are scored 10 points each. Each firer is allowed four rounds.

Period 11 tests the student's proficiency in a record firing exercise, and completes the Alfred program.

Advanced Course ROTC cadets (juniors who will attend summer camp during the following summer) are utilized as assistant instructors throughout the course, particularly in the conduct of concurrent training. In the same way, the more experienced personnel of a National Guard or Reserve unit may be employed to give the kind of individual attention and immediate supervision which ensures that the student understands and learns.

Students respond well to the Alfred Trainfire I Program. They are particularly enthusiastic about the fleeting (bobbing) and landscape target exercises. By requiring the use of reference points to engage likely but hidden targets, the landscape target provides a means of applying on indoor ranges many of the elements of the Trainfire concept.

The Alfred program cannot, of course, duplicate Trainfire I. It does, however, provide a means of teaching many Trainfire techniques as thoroughly as possible on indoor ranges. The logistical support it requires is rudimentary. The Alfred University maintenance shop and conventional channels of military procurement are able to supply all but two of the necessary items of equipment. These two items—the Trainfire I half-bull target scaled down for the 50-foot range and the small-scale silhouette target—are obtained from a local printer at low cost.

Besides the specific evidence it provides of the possibility of adapting Trainfire I to the indoor range, the Alfred program seems generally to be a good example of creative thinking in solving training problems. There are probably many other areas in which similar ingenuity might improve standard training, or introduce some of the advantages of standard training where circumstances do not permit full-scale implementation.

The Alfred Trainfire I program is not only a guide for ROTC, Reserve and National Guard units, but also for active Army units which have indoor ranges available and may find it possible to use them in teaching some of the Trainfire I principles and techniques before standard, full-scale Trainfire I ranges become available.—Editor.

SMALLBORE TRAINFIRE I:
AN INFANTRY SCHOOL SOLUTION

by Capt James R. Semmens

THE BIGGEST problem found in devising any indoor Trainfire I program is the presentation of field firing and record firing. The fact that an indoor range does not have enough depth to allow the trajectory of a bullet to drop appreciably, and that, regardless of target arrangement, depth cannot be simulated effectively by ordinary means, is a serious drawback to some of the proposed programs. The Rifle Committee of the Weapons Department, United States Army Infantry School, has developed a system which, if adopted, may help to solve the problem of recreating field and record firing on an indoor range.

The USAIS system is a modification of the DUFFCO indoor range system and consists of a 16mm projector, suitable films of both the field firing and record firing ranges, and a special projection screen at which the soldier can fire a .22-caliber rifle. This equipment may sound expensive, but the projector is a normal item of issue and the other components of a prototype system were assembled at Fort Benning at a cost of less than 50 dollars.

The projection screen is placed 50 feet from the firing line on the indoor range. The projector itself is placed above and behind the firing line. Films of a single lane on both the field and record firing ranges are projected on the special screen. The firer watches the screen and waits for the normal range commands. When a target appears, he engages it in much the same manner as he would on an actual outdoor range.

One of the important advantages of the School system is that it requires application of the principle of hold-off. This is because during battle-sight zeroing the firer has set his rear sights so that the point of aim and the point of impact are kept two centimeters apart—the height of the zeroing paster. In order to hit his target, he must therefore correct this difference by using hold-off.

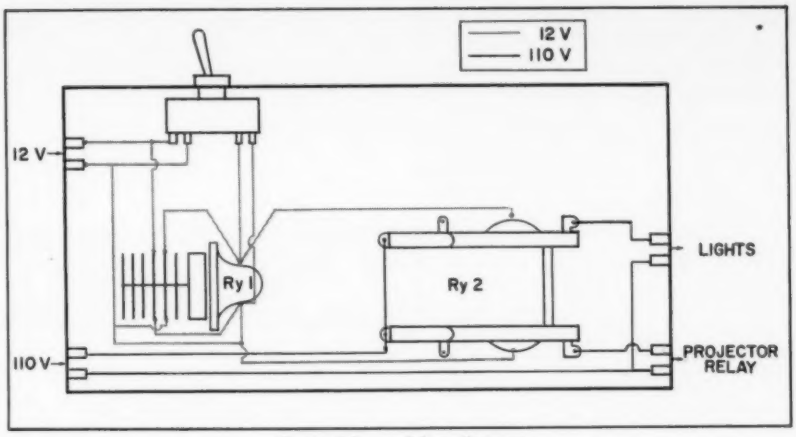
Wind may be simulated in an analogous way, by placing a windage setting on the sights which will cause the rifle to fire either to the right or left, as though a wind were blowing from either three or nine o'clock. The firer must compensate for this initial "missetting" by making the customary correction for the three or nine o'clock wind.

As the bullet passes through the projection screen, micro-switches are activated which stop the projector—leaving the picture projected on the screen—and turn on lights behind the screen. The lights clearly illuminate bullet holes, and the relation of the point of impact to the target can be easily determined.

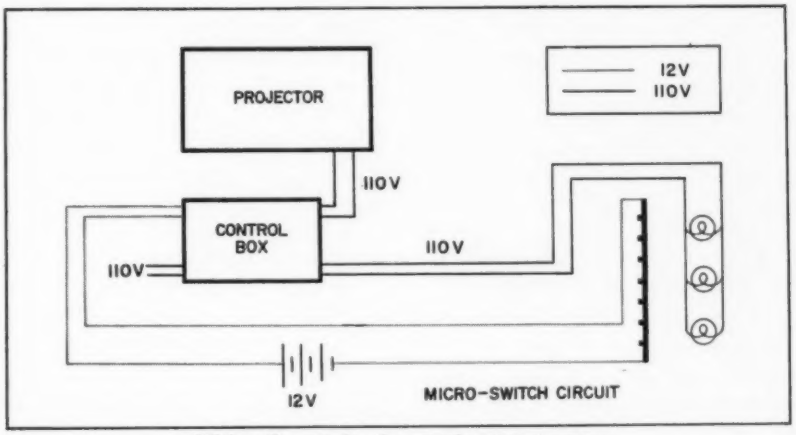
Films depict the actual sequence of target appearance for a particular period of instruction on actual Trainfire I field or record firing ranges. These films are photographed in color for maximum realism, and can always be kept within 10 minutes running time. The appearance of depth, obviously, exists because close-in targets are large, and near the bottom of the screen, while distant targets are small and near the top of the screen.

The School system cannot be used for those periods of field or record firing in which the student actually advances upon his targets, but this is not a serious disadvantage, since the indoor range will be used mainly to familiarize the Reserve, National Guard or ROTC student with the Trainfire I course prior to actual range firing during annual training or summer encampment.

The projector used in the prototype system was an obsolete PH131. It was modified by replacing the mechanical linkage to the clutch with an electrical relay which stops the projector automatically through the activation of a series of relays in a control box and the micro-switches located on the projection screen. The control box (Figure 1) is mounted on the left side of the projector so it does not interfere with projector operation. It is 2 x 4 x 6 inches, and contains a reset switch, two relays, and plugs and jacks for 12-volt and 110-volt wires. The electrical circuit of the whole system is represented in Figure 2. Relay 1 in the control box is a "hold relay" which holds Relay 2 in a closed position until the micro-switches are activated. When the micro-switches are activated, Relay 1 opens, allowing Relay 2 to open as well. When Relay 2 is opened, 110 volts are transmitted to the relay controlling projector movement, and also to the lights behind the screen. The film stops, and the lights come on. When the reset switch is manually moved to the "on" position by the projector operator, 12 volts are transmitted to the coils of both relays in the control box, and power is consequently cut off from the projector relay and the floodlights. The film then continues. Returning the reset switch



Control box wiring diagram.



Wiring diagram for the complete target system.

Capt James R. Semmens was graduated from the U. S. Military Academy in 1951. He served as platoon leader with the 112th Infantry, 28th Division, until 1954. After completing the Advanced Course, he was assigned to the Infantry School's Weapons Department as a team chief on the Rifle Committee. Early this year he transferred to the Corps of Engineers and will soon receive a Korean assignment. This is the second article Captain Semmens has contributed to *Infantry*.

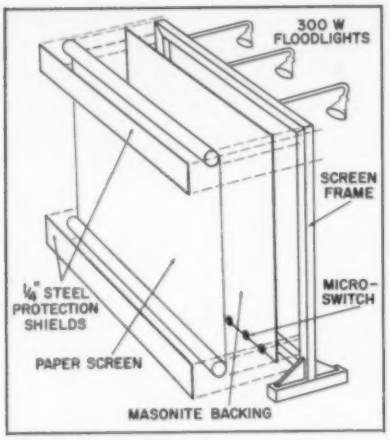
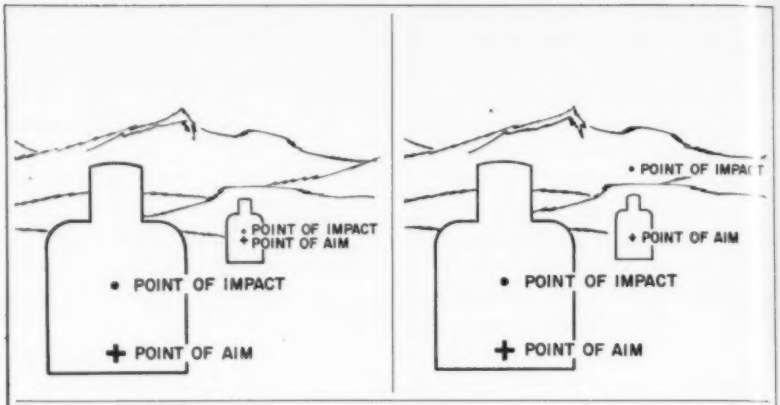


Figure 3. Expanded view of target screen.



The School system of indoor Trainfire I requires the firer to correct for distant (smaller) targets by lowering his aim. This is exactly the reverse of the correction required under normal field conditions. In the field (above, left), the point of aim for a distant target will be higher than the point of aim for a nearer target in order for the point of bullet impact to remain "on target" in both cases. But on the indoor screen (above, right), which only gives the illusion of depth, if the point of aim rises, the bullet will overshoot. The only way to obtain hits on "distant" targets under the School system is to lower the point of aim, as if the targets were merely smaller and not farther away. There exists, in consequence, the problem of transition from the School's indoor Trainfire I to standard Trainfire I ranges. The Weapons Department feels that this problem is a minor one, and does not detract from the realism the School system provides.—Editor

to "off" has no effect except to prepare the system for a new cycle of operation. A 110-volt relay is required on the projector, incidentally, to provide sufficient force to operate the clutch.

The screen (Figure 3) employed in the School system consists of a roll of paper six feet wide upon which the picture is projected, a masonite backing board which transmits the shock of the bullet strike to micro-switches mounted at the bottom of the backing board, a frame to elevate the screen approximately two feet from the floor, a series of lights mounted on the top rear of the frame, and two quarter-inch steel shields in front of the bottom and top of the screen which protect the micro-switches, lights and paper-rolls.

Once a round has been fired and scored, the paper is rolled up approximately one-quarter inch, so as to disalign the bullet hole in the paper and the hole in the backing plate. In this way, light is prevented from shining through an old hole when the next round is being scored. Rather than doing this manually, two servo-mechanisms, one connected to the paper roller and one mounted by the projector, will allow the paper to be advanced by the projector operator. The prototype system did not include this refinement, but it may be added at nominal additional cost.

Not only does the School system permit the presentation of Trainfire I field and record firing on an indoor range, but special training on jungle, desert or arctic courses could easily be provided merely by obtaining relevant films. Target detection in varying terrains could also be taught by this technique.

At the present time, a requirement exists at the U.S. Naval Training Device Center, Port Washington, N.Y., for the development of a standard indoor Trainfire I range based on the results of the prototype tests conducted at Fort Benning. The School system goes a long way towards providing an indoor recreation of all the outdoor realism of Trainfire I and, as a result, is a significant step towards providing modern training where complex ranges are not available.

Worth Repeating

"It should be no more difficult to deliver such devices than other weapons. The same delivery vehicles—aircraft, submarines or guided missiles—could be used. If it is possible for an enemy to drop an atomic bomb on a city, it should be equally possible to disseminate a cloud of biological agent over that city."

"More than any other form of warfare, biological warfare lends itself best to covert use by an enemy. By undercover methods, saboteurs could plant disease germs almost anywhere they chose—in water supplies, in food, in air-conditioning systems, and by almost any means you can think of which would bring the disease agent in contact with the intended victims, whether man, animals or plants."
—Maj Gen William M. Creasy

YOUR INFANTRY CAREER

This department provides important information on policies and personnel actions which affect your Infantry career. Material for Regular Army and active duty Reserve officers is furnished by Infantry Branch of the Officers Assignment Division. Similar material for Infantry officers of the USAR is provided by the Army Reserve Branch of the Adjutant General's Office. Information for the enlisted Infantryman is obtained from other Department of the Army agencies.

From Infantry Branch

THE LAST article in this series answered questions pertaining to officer assignment. In this issue questions are covered concerning personnel actions, other than assignment and education, in which officers visiting Infantry Branch have indicated an interest.

RETENTION BEYOND RETIREMENT ELIGIBILITY

Question: Can a Reserve officer remain on active duty after attaining 20-year retirement eligibility?

Answer: Yes. Under the Long Range Active Duty Program, the records of all Reserve officers who are scheduled for 20-year retirement during the next fiscal year are screened annually to determine those who should be retained on active duty.

Selections are made by a board of officers convened under the provisions of paragraph 11, AR 135–215. This board meets each fall. Consideration for all officers is automatic and applications are not required. For example, the board that convenes in the fall of this year will consider for retention all Reserve officers scheduled for 20-year retirement in FY 1961.

Officers selected for retention will be invited by letter to remain on active duty. Those not selected will be notified by letter approximately six months prior to their retirement eligibility date.

The number of selections in the past has been small. For FY 1960, six Infantry officers out of 367 considered were offered the opportunity to remain on active duty. Army wide, 80 officers out of 1650 considered were invited to remain on active duty. No fixed number or percentage per year has been established for the future. Too many variables affect this portion of the Long Range Active Duty Program to permit projection more than one year in advance.

Question: How long will those selected be retained?

Answer: Selected officers are retained generally until the Reserve Officers Personnel Act requires their release.

REGULAR ARMY AUGMENTATION

Question: Should an officer continue to apply for Regular Army appointment after failing to be selected under the same or a previous program?

Answer: Yes. The disappointment following notification of non-selection for Regular Army should not discourage any officer from applying again after the required interval. Many officers who were not selected under the Circular 601–26 Augmentation Program have resubmitted under AR 601–100 and have been selected. In some cases this was due to revised ceilings on all year groups junior to 1941. In other cases it was due to additional efficiency reports being available to the board, or to qualifications attained by the officer during the interim period through attendance at civilian and military schools.

Question: Does lack of a college degree preclude selection?

Answer: No. However, a college education is very important in this era of technical advance. A baccalaureate degree of any kind is a basic indicator of educational progress and learning capacity for further military schooling. Strong support is always available for the officer who has not yet been graduated but who is actively continuing his academic progress toward a degree. If reasonable indication exists that a degree will be forthcoming, even in several years, the lack of a college degree is not an unfavorable factor. On the other hand, the individual who is doing nothing to improve his scholastic level will find himself less favorably considered. In short, there is no magic formula for selection. An outstanding performance and demonstrated leadership ability will in many cases outweigh a lack of formal education.

INTERSERVICE TRANSFERS

Question: Can I transfer to another service?

Answer: Yes. Recent publication of AR 618–100 announces the procedure for application for interservice transfer to the Navy, the Marine Corps or the Air Force.

Applications from Army officers should be in letter form, including information outlined in the regulation, and should be submitted to The Adjutant General, Department of Army, through command channels.

No loss or gain of relative rank will be incurred by the individual as a result of transfer, nor will the transfer be accomplished unless the individual is especially qualified to contribute to the success of an activity of another service.

BRANCH TRANSFERS

Question: Should I request transfer from Infantry to another branch?

Answer: This is a decision that must be made by the individual officer concerned after careful consideration of his length of service, experience, background and overall qualifications. Primarily because of branch overstrength, Infantry Branch policy on transfers from Infantry is liberal and no objection will be interposed to a transfer application provided the officer is eligible under appropriate regulations.

AUS PROMOTIONS

Question: What is the meaning of the term "best qualified" as applied to methods of selection for promotion?

Answer: The policies and procedures for the temporary promotion of officers in the AUS are outlined in AR 624–115. This regulation prescribes that promotion selection boards will use the "best qualified" method in selections for temporary promotion to the grades of colonel, lieutenant colonel and major. Under this method the board determines from all officers in the zone of consideration those considered to be "fully qualified" for promotion and those considered to be "not fully qualified" for promotion. From the group of officers found "fully qualified," the board then selects and recommends for promotion those officers that are considered to be "best qualified." The names of officers selected by promotion boards as "best qualified" are published in DA Circulars. Officers considered by the board to be "fully qualified" and "not fully qualified" are informed of the board's decision in their case by individual letter.

Question: What is the meaning of the term "fully qualified but not selected" as applied to selection for temporary promotion to the grades of major, lieutenant colonel and colonel?

Answer: To be found "fully qualified but not selected" by a promotion selection board means that the officer is considered by the board to be qualified professionally and morally, and is capable of performing the duties and assuming the responsibilities of the next higher grade; however, the officer is not selected for promotion as best qualified. To be found "fully qualified but not selected" by a selection board is not a promotion passover.

Question: What is the policy of the Department of the Army concerning personnel actions on officers found to be "fully qualified but not selected" for promotion?

Answer: It is the intent of DA that no disadvantage should accrue to officers as a result of their having been considered "fully qualified but not selected" for promotion. These officers are considered for assignments and other personnel actions on the same basis as all other officers of their grade and experience.

FAILURE OF THE INFANTRY ADVANCED COURSE

Question: What is the significance when an officer fails to complete successfully the Infantry Officers Advanced Course?

Answer: Failure of the Advanced Course indicates the officer lacks the ability to acquire the technical proficiency required of his grade. Therefore, his over-all record is screened to determine if his failure of the course, when viewed in conjunction with other aspects of his record, warrants his release from the service under appropriate regulations.

RETENTION ON AD AS PARTIALLY DISABLED

Question: As a result of my annual physical examination, I have been declared unfit for retention in the service because of a physical disability. I feel I am able to perform certain duties and would like to remain on active duty rather than be retired or discharged. Is this possible?

Answer: Yes. Under the provisions of AR 616–41, an individual may request retention as partially disabled if his disability is of a non-progressive permanent nature incurred incident to service. The individual must signify a desire to be continued on active duty by formal application as provided in paragraph 4 of the regulation, be capable of caring for personal needs unaided, be in such physical condition that hospitalization or loss of duty time because of the disabilities considered may not

be expected, be otherwise qualified for retention except for the specific disability, and be capable of performing useful service in a current MOS for which he is qualified or potentially trainable.

EFFICIENCY REPORTS

Question: After a review of my efficiency report file maintained in Infantry Branch, I note that certain efficiency reports contain adverse comments and low manner-of-performance ratings. What should I do to lessen the adverse effects a low report may have on my future career?

Answer: You should thoroughly analyze the comments contained in your reports to determine your weak points. You should then evolve a course of action to overcome these weaknesses. Your efforts, capabilities and limitations form the basis of your efficiency reports. Therefore, you must always remember that the greatest responsibility for improving efficiency and obtaining higher efficiency ratings lies with the individual officer.

SCHOOL LISTS 1959-1960

The following Infantry officers have been selected to attend service school courses for FY 1960.

Armed Forces Service College

Lt Colonels

Brust, Robert P.
Carley, John T., Jr.
Connell, James M.
Hicks, Harold A.
Kelley, Peter E.
May, Roy R., Jr.
Moore, Harold G.
Oliver, George S.
Viney, George C.

Majors

Clark, Alphus R.
Fix, Joseph E., III
Garrett, O. G.
Gatsis, Andrew J.
Hankins, William B., Jr.
Hoefling, John A.
Karhohs, Fred E.
Krause, Frederick G.
Miller, Raymond O.
Sniffin, Charles R.
Spragins, Charles E.

United Kingdom Joint Services Staff College

Major John P. Barker

NONCOMMISSIONED OFFICERS

Proficiency Testing

All eligible persons in selected MOSs—including those already receiving proficiency pay, but not including E8s and E9s—will be retested during November and December for award of proficiency ratings. Retaining or obtaining proficiency pay depends upon test scores at least as high as a prescribed minimum set for each MOS. Those EM now receiving proficiency pay who fail to obtain the requisite scores will lose pro-pay status beginning January 1.

To be eligible for the coming tests, personnel must be in designated MOSs, and must hold pay grade E4 or higher, but not higher than that authorized for their MOS, including skill digit, or lower than the grade demanded by the PMOS. In addition, they must have at least six months' continuous active duty.

Only E8s and E9s are exempt from the tests at this time. If they are already receiving pro-pay, or have qualified for it, they retain their rating pending announcement of proficiency testing in their E8 or E9 MOS.

MOS Proficiency Test Aids for each MOS will be published periodically through the medium of DA pamphlets to provide study guidance.

Extension of Enlistments

A revision of AR 601–10 embodies changes in DA policy on extension of Regular Army enlistments. These changes will permit qualified Regular Army enlisted personnel to extend a current enlistment for periods of three, six, nine or eleven months. Extension of enlistments for one- or two-year periods will no longer be authorized. Also, any extension of six-year enlistments is prohibited. More than one extension per enlistment will not be authorized except upon specific approval of the Department of the Army.

Position Identification, Grades E8 and E9

Directives which will permit the identification of E8 and E9 positions in TOEs and TDs will soon be available to field commanders. These directives are part of the general upgrading program which has as its purposes relieving compression in the upper grades of E6 and E7, regarding key leadership and technical supervisory positions in line with the increased technical requirements of the modern Army, restoring the prestige of top NCOs, attracting and retaining better individuals for an Army career, and reducing high turnover and costly training in critical job areas.

The upgrading program to date has been directed towards identifying MOSs in the NCO area which warrant positions in the grades of E8 and E9. The second phase of the program will be directed towards identifying positions in the technical areas. The third phase of the program will consist of a continuing review and further job analysis to ensure that the structure remains realistic and current.

Automatic Soldiers' Deposits

On 1 August 1959 the Army enlarged the Soldiers' Deposits program to include deposits by payroll deduction. Department of the Army Circular 35–88, 22 June 1959, provides that enlisted members may authorize local finance officers to make collections from regular monthly military pay vouchers.

Electronic Eyes and Ears

Surveillance devices now authorized the Infantry division and the battle group can give added security and enhance target detection if properly employed.

by Maj William B. Fowlkes and Capt Rolfe G. Arnhym

OF PARTICULAR concern to Infantrymen are recent changes in the organization and equipment of the Infantry division which have increased over-all organic surveillance capabilities. In the past, our ability to conduct effective operations at night and during periods of poor visibility was limited. Without eyes to see, we depended on obtaining information about the enemy from listening posts, sound ranging equipment and reconnaissance patrols. Now, however, to extend our battle surveillance beyond the influence of weather or darkness, a new family of ground and aerial surveillance devices has been developed. Some of this equipment will become available during 1960.

To employ these devices, new units have been organized in the Infantry division. Among these is the radar section of the Infantry division battle group, which is composed of two medium range radar teams and five short range radar teams. The section headquarters consists of the section leader (a lieutenant), a section sergeant and a radar mechanic. It is the section leader who recommends to the battle group commander methods of employment of the section. Within the guidance of the surveillance plan, the section leader selects primary positions and assigns team surveillance sectors for the medium range radar teams. He ensures that the medium range radars are oriented so as to permit proper target identification and location, and checks with the fire support coordinator to ensure that fires can be applied within the area of surveillance. In addition, he coordinates communication, security, administration and logistical support with unit commanders in whose area his radar teams are operating.

The section sergeant is second in command, and the radar mechanic performs second-echelon maintenance on radar equipment. Third-echelon

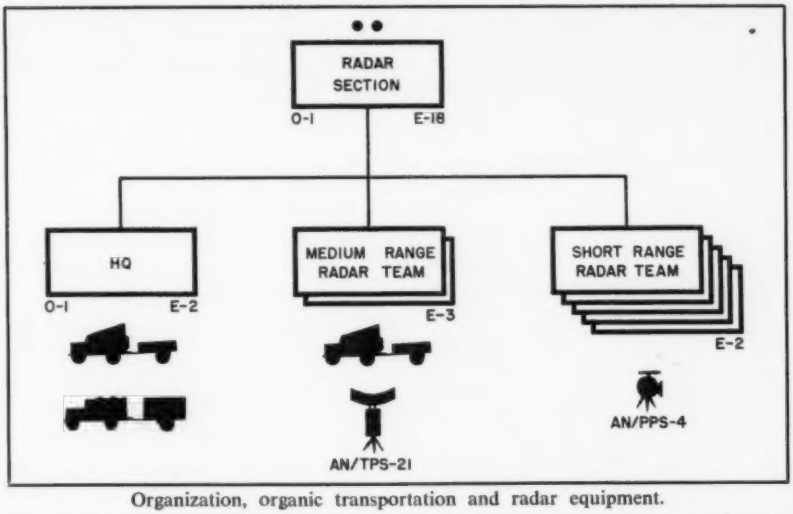
maintenance will normally be provided by the division signal battalion.

Each medium range radar team also consists of three men—a senior radar operator and two assistant operators. The senior operator's duties generally parallel those of a crew-served weapons squad leader, while the assistant operators actually operate the radar and communication equipment.

The short range radar team, which consists of one senior operator and one assistant operator, is normally attached to a rifle company or other subordinate unit of the battle group, and in this case receives its instructions concerning primary positioning and is assigned specific surveillance areas from the commander of the subordinate unit. When the short range team is not attached, these instructions are provided by the radar section leader. The senior operator in the short range team is responsible for reporting all information obtained by his team to the commander of the unit to which it is attached, or to the section leader. Wire or radio communication is established with the unit for this purpose.

As organized, there are not enough operators in the radar section to employ the radars over extended periods of time. Experience indicates that to attain maximum efficiency of operation, operators should alternate every 30 minutes. Should it become necessary to operate the equipment over prolonged periods, cross-training of other battle group personnel will be necessary to provide additional operators. Operators of the medium range radar, who must have an elementary communication background, may be trained in two weeks. Short range operators need no specific technical background and may also be trained in two weeks.

Transportation organic to the radar section consists of one ¾-ton truck (driver: radar repairman) and one ¼-ton truck (driver: section sergeant) for the section headquarters, and one ¼-ton truck (drivers: radar operators) for each medium range radar team. Every truck is provided with a trailer. The short range radar teams have no organic transportation. Consequently, when a short range team is attached to a subordinate unit of the battle group, and that unit is motorized or mechanized, transportation must be made available by the unit or the ¾-ton truck of the section headquarters must be employed by the team. Ordinarily, however, each short range radar is transported on two packboards by its team.



Organization, organic transportation and radar equipment.

The communication equipment of the radar section consists of an AN/VRQ–3 radio mounted on the section leader's ¼-ton truck, an AN/VRC–10 radio mounted on each of the two ¼-ton trucks of the medium range teams, and one AN/PRC–10 per short range radar team. The section leader's AN/VRQ–3 nets with the medium and short range radar teams as well as with higher headquarters.

The radar employed by the short range teams is the AN/PPS–4 Silent

The AN/PPS–4 Silent Sentry used by the short range team.

The AN/TPS–21 used by the long range teams.

Sentry. The weight of this radar, including generator, is 108 pounds. Future versions of this set will utilize a battery pack power supply, which will reduce the weight.

Its two-man crew can put the AN/PPS–4 in operation in 10 minutes. It is a line-of-sight radar which can detect moving individuals at ranges from 50 meters to 3500 meters and moving vehicles at ranges from 50 meters to 6000 meters. On-target indication is a characteristic audio tone in the operator's headset. Within the cited ranges, the Silent Sentry has an accuracy of plus or minus 25 meters and will penetrate light underbrush. Heavy brush and similar obstacles cannot be penetrated, and wind, rain and snow will slightly obscure the characteristic audio tone.

Variations in the audio tone permit the operator to identify types and speeds of targets. Maximum signal indicates "on target." Target range is indicated on a dial on the operator's panel. Azimuth may be read on the tripod mount. The Silent Sentry beam is 6.5 degrees in width, and the set searches a preset area of 30, 180 or 550 meters' depth (Figure 1) within its range. Azimuth is set manually through 6400 mils. No provision is made for automatic or remote operation.

The medium range radar teams use the AN/TPS–21. This set consists of seven major units, which may be carried on five standard packboards or, when loaded into two boxes, in a ¼-ton truck trailer. The range of the AN/TPS–21 is from 90 to 5000 meters for vehicles. Here again, the on-target indication is an audio tone which varies with the type and speed of target. Pitch of tone increases with target speed.

The AN/TPS–21, like the AN/PPS–4, is a line-of-sight device, and any large object which impedes radio waves will also prevent target indication. However, the AN/TPS–21 will penetrate wind, fog, rain, snow, and light brush, and in some instances lightly fabricated buildings. The device is equipped for automatic "sweep" surveillance of an area 800 meters deep and 100 to 3200 mils wide (Figure 2) within its range. Any such sector within 6400 mils may be selected. Remote control operation is accomplished through the use of a 150-foot cable.

The battle group S2 has primary staff responsibility for the employment of the radar section. He recommends to the battle group commander whether the radars should be employed in general support, employed in direct support, or attached. In conjunction with the radar section leader and the S3, he also prepares the surveillance plan and designates general radar sites and specific areas of surveillance. A careful surveillance plan is the only way of obtaining adequate coverage and fire support coordination.

Proper orientation of the radars is of great importance, since it allows targets detected by the radars to be taken under fire by fire support elements firing preplanned concentrations. Radar orientation and fire support coordination should, of course, be accomplished during daylight hours when feasible. Since the radars operate on line of sight and require background against which to detect movement, they are normally situated on dominating terrain, similar to that required for a company or battle group observation post. Radars are moved into previously prepared positions during periods of poor visibility or darkness. When the medium range radar must be located in an exposed position, remote control operation is desirable. If enemy activity is detected in an area not included in the surveillance plan, a new mission may be prescribed which redirects the employment of the radar, whether medium or short range. When the mission is complete, the operator returns to the original surveillance plan.

Assigning each radar team a specific sector of surveillance ensures proper coverage of critical terrain. In making such assignment, consideration is given to terrain, enemy disposition, enemy capabilities, equipment capabilities and desired degree of area overlap. Frequency of coverage must also be specified.

Radars are normally employed during periods of reduced visibility. However, they may also be employed to search dangerous avenues of approach, open areas or road junctions even during periods of good visibility, while patrols and observation posts are used where line of sight is obscured. With good visibility, the visual capability of the Infantry or Artillery observer is only about 3500 meters. The use of far-seeing radar to supplement visual observation will obviously provide the Infantry commander with earlier warning, and correspondingly greater reaction time.

In the offense, radar teams are employed to provide surveillance forward of the line of contact as well as surveillance of an open or exposed flank. They are also used to vector friendly elements during the hours of darkness or poor visibility. In general, they should be used as far forward as the tactical situation permits. In

the defense, the short range radar teams are normally attached to the forward units or security elements. Subordinate unit commanders will usually employ the short range radars to cover gaps between platoons and companies, and for surveillance of specific areas to the front or flank. The medium range radars, normally employed in general support to extend the coverage of the shorter range devices, add depth to the battle group surveillance coverage.

In retrograde operations, medium range radar sites, or positions to which the medium range teams will displace, are selected and prepared. Medium range radar teams may remain with detachments left in contact in a night withdrawal, in which case they are attached to a unit for the withdrawal. Short range radar teams operating under the control of the company or subordinate unit to which they are attached may remain with detachments left in contact or displace to new surveillance sites in a manner similar to the displacement of the medium range teams.

In airmobile and airborne operations, the radar section can be delivered into combat by parachute, assault aircraft or transport helicopter. The section is transported to the objective area as early as practicable to provide maximum time for reconnaissance and preparation of radar sites. Usually the section lands with the main body but teams may land earlier with security elements.

The radar section's ground surveillance capabilities are complemented by the aerial capabilities of the Infantry division aerial surveillance platoon. The platoon is organic to the division aviation company, and gives Infantry its own direct aerial observation, both through the use of aircraft and surveillance drones.

The aerial surveillance platoon furnishes information of enemy movement, provides security, acquires targets and conducts post-strike analysis of the effects of nuclear weapons by means of aerial observation, aerial photography and aerial imagery (photographs of the radar scope). The platoon is normally employed as a unit, but its organization permits attachment of sections to subordinate units.

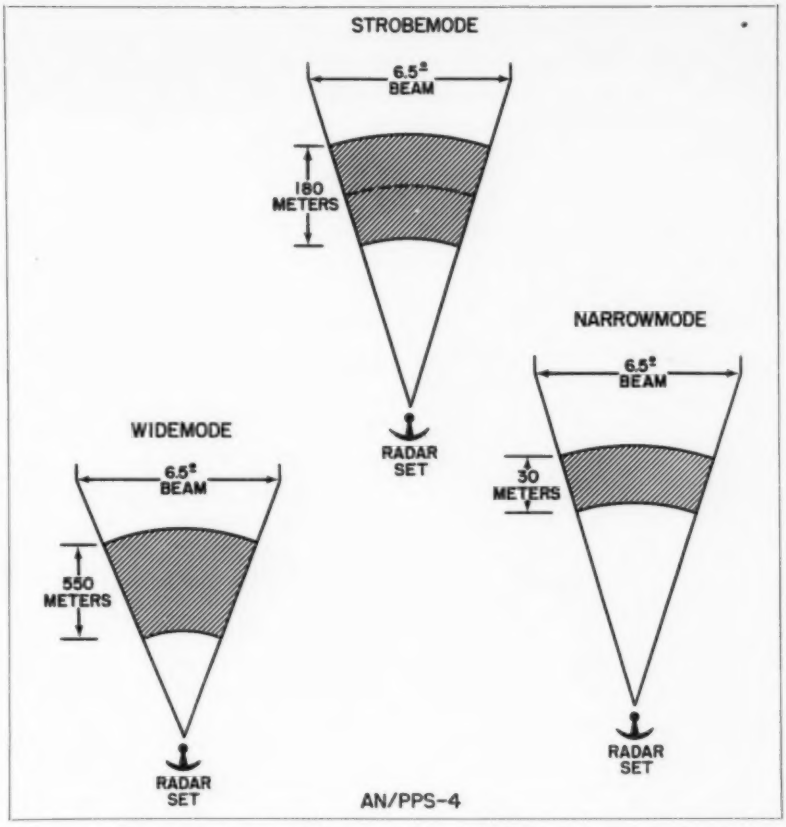


Figure 1. The three depths of search of the AN/PPS-4 are represented by the shaded areas.

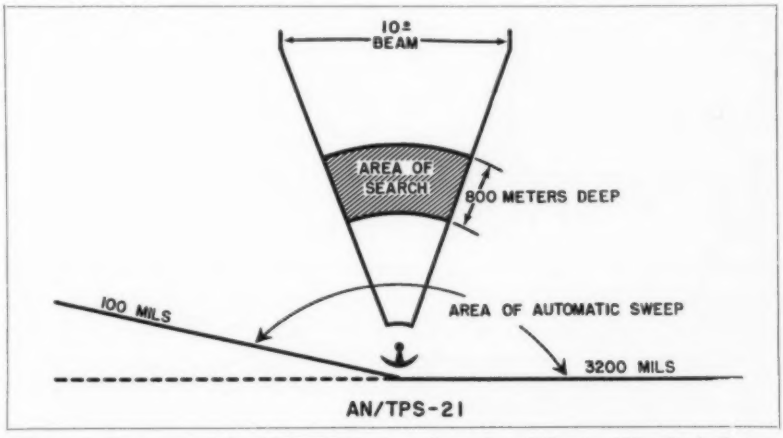
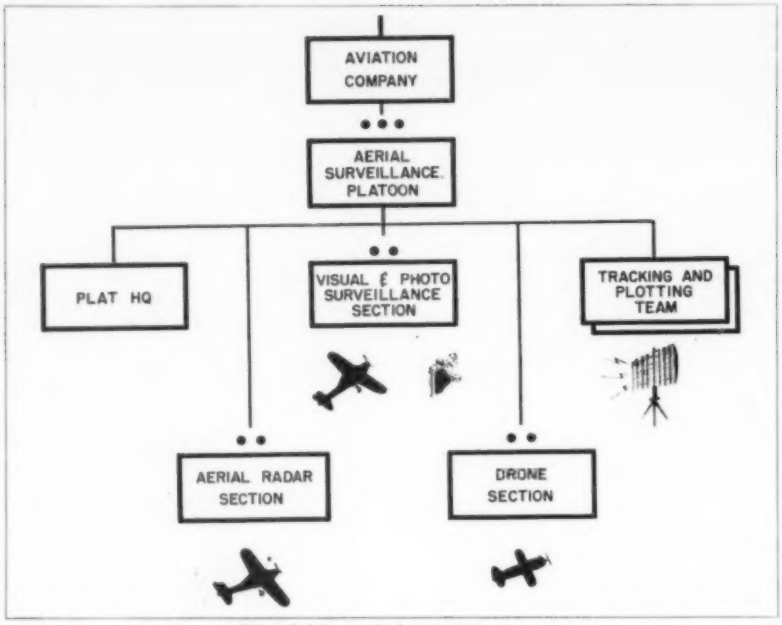


Figure 2. Coverage of the AN/TPS-21. Area from dotted line to 100 mils indicates minimum automatic sweep; area from dotted line to 3200 mils indicates maximum automatic sweep.

The visual and photographic surveillance section employs four aircraft. Cameras (KA–20) mounted on these aircraft provide a day and night photographic capability. The KA–20 uses a 75 foot roll of film, 9½ inches wide. One roll of film



The division aviation company.

will produce 95 negatives which may be matched to form stereo pairs or reconnaissance strips.

The aerial radar section uses AN/APS–94 radars mounted at present on the RL–23D reconnaissance aircraft. The AN/APS–94 will eventually be mounted in the new Mohawk aircraft, however. This aerial radar, operated by one man, scans the ground to either side of the plane, and can therefore search forward of the FEBA without exposing the plane to enemy fire.

The drone section consists of 12 SD1 drones which are controlled in flight by a drone controller who tracks altitude and location by means of the tracking and plotting section's radar (AN/MPQ–29) van.

The surveillance drone system includes support and maintenance equipment necessary to perform drone surveillance missions under tactical conditions. The drone section has a sustained operational capability of three to four missions daily. The speed of the SD1 drone is 192 miles per hour at sea level. It has an endurance of 30 minutes, thus giving it an overall range of 100 miles, or an operational radius of 50 miles. Since the radio control system operates in the UHF band, control is limited to line of sight. Therefore, maximum range missions cannot be conducted at low altitudes.

The drone can carry 90 pounds of surveillance equipment. At present, the KA–20 camera is mounted on the drone. Weather conditions do not limit drone operations when the AN/MPQ–29 is used. The only limitation imposed upon the equipment is the ability of the camera to see the target. Drone recovery is accomplished through a self-contained parachute activated by the operator.

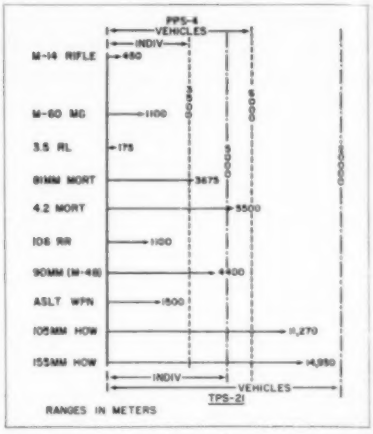


Figure 3. Comparison of ranges of common weapons with vehicle-identification and individual-identification ranges of AN/PPS-4 and AN/TPS-21 radars.

The combined capabilities of the devices employed by the battle group radar section and the division aerial surveillance platoon provide Infantry commanders with combat surveillance that is commensurate with the range of their weapons (Figure 3). This new equipment will not replace standard surveillance means—observation or listening posts, and patrols—but it will add new means which will improve our ability to perform our present missions. In recent years, great emphasis has been placed on operations at night or during periods of limited visibility. In such operations, surveillance devices will be of particular value. The vast increases in our firepower are only effective when they are applied, and the surveillance devices described above will contribute to the kind of wide, sensitive target detection the fluid, all-weather, twenty-four hour battlefield demands.

Maj William B. Fowlkes received an OCS commission in 1944. In 1945 he was a platoon leader with the 378th Infantry in Europe. The following year he was assigned as G3 of the 4th Infantry Division. Returning to Europe, he became 18th Infantry S2 and S3. He served as assistant G3, 3d Armored Division until 1951, when he attended the Armor School. In 1952 he went to Korea to become advisor to the assistant G3, Headquarters, ROK Army. He attended the USACGSC in 1955, and then was assigned to the Joint Intelligence Group, Office of the Joint Chiefs of Staff. Major Fowlkes is now an instructor in the USAIS Command and Staff Department.

Capt Rolfe G. Arnhym is a graduate of the United States Military Academy. After attending the Basic Infantry Officers Course at the Infantry School, he was a company commander with the 145th Infantry Regiment at Camp Polk. He served as aide-de-camp to the commanding general of the 10th Infantry Division until 1955, when he became company executive officer, and later company commander, battle group S3 and battle group S1 with the 87th Infantry in Europe. After attending the Infantry Officers Advanced Course in 1958, Captain Arnhym was given his present assignment as an instructor in the USAIS Command and Staff Department.

THE SOUNDING BOARD

This department gives every soldier an opportunity to "sound off" on a wide variety of subjects. It provides an outlet for thinking which need not conform to doctrine or policy. We are interested in constructive ideas—well-conceived and concisely expressed—which challenge or inform. Articles will be paid for at regular rates.

The Regiment Must Return

by Capt Harold J. Meyer

CHANGE and progress have characterized the recent history of the Infantry. Advances since the dark days of the Pusan Perimeter, especially in firepower, mechanization and organization, have been rapid and sweeping. One change which deserves some rather close scrutiny is the Regimental Combat Arms System.

This system, implemented at the time of the inception of the Pentomic organization, was designed to ensure that all Infantry units stemmed from Regiments with glorious histories and worthy traditions. Thus, today's basic battlefield unit consists of a number of companies and a headquarters lumped together under the quasi-military title of "group." This combination has been given a number to identify it as the first, second or what have you, group and then assigned a regimental designation. In this case change has not meant progress, and has succeeded only in emasculating proud and cherished Army traditions.

A study of any change must ask the question: will it bring about the desired effect or will it engender a state of affairs even less desirable than that which it was intended to alter? The desired result of RCAS was the automatic extension to any battle group, upon activation, of a built-in esprit de corps. A soldier assigned to a battle group is supposed to identify himself automatically with the traditions of the regiment for which his battle group was named. Then, we are assured, his morale will be high and his efficiency above reproach, for morale, of course, stems in large part from pride of achievement. This is fine, and is true as far as it goes, but any experienced leader of men will tell you that spirit is an intangible thing—it cannot be concocted, decreed or issued.

The Infantry regimental spirit, sometimes shown by the tilt of a soldier's chin, a clasp of an officer's handshake, or the smartness of the salute between two fighting men, cannot be legislated and officially published. Regimental spirit is competition in all the activities that a soldier encounters in training. It is a colonel, a staff officer, a sentinel—perhaps not unlike those colonels and staff officers and sentinels of other regiments—but still unique, for they are members of *the* regiment, be it the 1st or the 23rd or the 506th. Regimental spirit is combat, with its darkness and fear. It is the sight of a fallen soldier known, but not really known, for he just joined—yet still he leaves a dreadful sense of loss for he is the regiment. The regimental spirit is a feeling of belonging, of being a part of a larger unit with its active headquarters close enough to recognize the individual man. The spirit of the regiment is professional soldiering, and when necessary the citizen answering the call. It is a sense of belonging, of contributing, and it is the knowledge that what we are and what we do is singular for we are the *only* regiment. No other similar sized unit can claim our heritage or speak with a pride which stems from our past.

The designers of RCAS failed to take the American soldier into consideration. He is a realist. He recognizes factors and elements which are close to him. His sentiments depend on what his unit is at the moment; his regard for his regiment rises and falls. He will be the first to subscribe allegiance, but he will be just as quick to say that a victory won long ago has little to do with his morale. A soldier is interested in the active element—not a musty, faded regimental color hanging in a museum or a somber chapel guarded by the uninterested. His feelings change if he passes in review with that same regimental color, for then he is the regiment and there is no other.

The RCAS was supposed to provide a regimental home for the combat Infantryman as does the British Regimental System. While it was hoped that this would support mobilization, and bring the Army closer to the public, it is unlikely that America as a nation will ever be as "military area" centered as are the English. A study of the historical development of our country fails to reveal a nationwide basis for the creation of military area loyalties. Further, those few area traditions which this country

does have in common with its Army have been destroyed by the unnecessary changes of the RCAS. Newspapers in Massachusetts, Georgia and Virginia have made adverse editorial comment about the "retiring" of the proud National Guard and Reserve units their towns and cities have traditionally sponsored. A staff officer's shallow thinking has in part destroyed the military traditions of three of the original colonies.

The solution to the problem is simplicity itself. Do away with the questionable title of "group" and call the unit an Infantry regiment. Too small for a regiment? Not so. The number of companies in a regiment has never been a stable thing. It has changed whenever new concepts and equipment have required. Whenever a system has been tried and found impractical it makes sense to do away with it. When a system has been tried and found to be detrimental it is mandatory that it be eliminated. Such is the case with RCAS. Let's return our regiments to active duty. Let's do away with a system which causes a soldier to look at another wearing the same regimental crests and wonder if they are members of the same outfit. Let's do away with a system which has removed proud old regiments from the divisions they have served so long. Let's give our regiments the chance once again to make a living contribution to the Army and the Infantry.

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of the School.

Capt Harold J. Meyer, Publications Officer for the Infantry School's Weapons Department, is a frequent contributor to *Infantry*. He is the author of "Weight —Nemesis of Mobility," and, in this issue, coauthor of "How to Inspect Company Weapons."

We Don't Need "Improved" Equipment

by Capt Winfield A. Holt and Sp4 Howard R. Webber

OUR STRATEGY relies upon technical superiority to compensate for our lack of manpower. In effect, the theory is that one American is worth ten Russians, or forty Chinese Reds or whatever, provided that American military technology is without equal.

This theory operates in our planning for possible nuclear conflict—we rely on the massive firepower of nuclear energies to negate numerical superiority, and presume that victory will belong to the army which is swifter, more daring and lighter on its feet.

It also operates in non-nuclear warfare—we expect our electronic surveillance devices to see more clearly than a hundred eyes, our vehicles to bring a larger portion of our smaller forces to bear, and our weapons to deliver more non-nuclear fires with more effect.

It is understandable, then, why we have placed so much emphasis on equipment—on modernizing what we have and developing what we do not have.

Military research and development is an area of problem and compromise. Obsolescence is always breathing down our necks. Quite often it actually outstrips us and the weapons we are able to put in the hands of the troops in the field are far inferior to those on our drawing board. Our constant dilemma, then, is to decide how long to endure obsolescence in the interest of tomorrow's breakthrough, and how soon to retool and reequip for what improvements.

If dilemmas are ever resolved, it is by judgment and perspective. Without these virtues, our development program may produce change for the sake of change, "improvements" that do not really improve but instead only alter. In the end, we find ourselves with a large class of new equipment which does a standard job better than its predecessor, but not enough better to make the change worthwhile — equipment which, for one reason or another, doesn't have the breadth, simplicity and ruggedness Infantry use requires. Each element in this class is in itself reasonable. The class as a whole, however, represents a kind of progress which is comforting, but really doesn't get us anywhere. The trend which produces this "progress" has aggregate, long-range effects which deserve attention.

Often such minor improvements are as expensive as radical changes, and since they are minor, there are infinitely more of them. As a result, when a true innovation in equipment is proposed, we are not only caught short of the funds we need for full emphasis and speedy development, but we are caught short of good will—in the Army, in the Defense Department, in the Congress and the public at large. The same citizen who is willing to devote several millions of tax dollars to the development of paper sandbags or a vacuum canteen might later object strenuously to spending a fraction of that on nuclear power sources. This would be especially true if the sandbag and canteen were rammed down

his throat in the form of increased taxes and then after a while discarded or again "improved."

The time has come for serious second-thoughts about this kind of "improved" equipment. Genuine improvement, of course, is all to the good. Yet convenience, for instance, can be very inconvenient on the battlefield if it requires complex echelons of supply and maintenance, or extraordinary skills which the ordinary Infantryman is not likely to possess. Change, after all, is not always for the good.

Theoretically, equipment specifications are established by military specialists and, theoretically, they must be held responsible for whatever trend there has been toward "improvements" versus genuine progress. Yet here again the danger is that the designers who are supposedly in the driver's seat will allow someone else to do the actual driving, that these designers will themselves be so mesmerized by "improvements" that industry is actively encouraged to produce them.

Our emphasis on equipment, of course, keeps us looking over our shoulders to see what the Communists are doing. This over-the-shoulder look creates additional problems. Of course, we must compare our preparedness to the enemy's, and we should be guided by what this comparison reveals. On the other hand, however, we must exert judgment of the kind mentioned above to determine exactly what we should match or surpass in kind, and what can be matched and surpassed by radical new departures in equipment (and for that matter, doctrine).

We must not allow the process of comparison to foster a "tit for tat" program of technical development. Just because the Russians have in their inventory an improved 2½-ton truck is not necessarily a good reason why we should have an improved deuce-and-a-half in ours. We may, indeed, need a tracked cargo vehicle, or a revolutionary cargo helicopter, but the point is that there are a million possibilities, and we must not lose sight of any of them. Correspondingly, we must learn to discard equipment which no longer answers our needs, regardless of whether or not the Soviets have retained it.

Just as we cannot allow the Russians to "improve" us, we cannot allow the Navy or the Air Force to do so. The Nautilus and the X15 are remarkable achievements, but as far as the mission of the Army is concerned, they are somewhat irrelevant ones. Such contrivances make loud noises in the press, but we must not be influenced by that. We have never been an arm of gadgetry but changes which are made simply to show how modern and vital we are will eventually make us gadgeteers and destroy us.

There is something to be said for "antique" Infantry weapons: they may be old, but they are at least plentiful and proved. Our 1911 pistol does an effective job for us in 1959. Our mess kit is little changed from 1918, but it works just as well as any mess kit can. We ride in vehicles substantially the same as those used in the 1940s, and yet the wheeled transportation they provide is as good as we can get. This equipment has been modified but it has not been "improved," in the sense the authors have used the word. It is not frivolous. In our hands it does the job. Let's leave it alone and go for the big leap rather than the slow, indecisive, expensive crawl. In combat, the offensive is decisive; the counterattack only restores the position. As long as the Infantry is content with research and development which concerns itself with matching either friends or enemies, point for point, we will always be counterattacking. We'll always be scrabbling to catch up and the initiative will never be ours.

Change we need, yes, but not "improvements" which save a few ounces or increase cyclic rates by a few rounds. We must, instead, be grimly content with our present gear—rather than wasting ourselves on interim items—so that we can develop startling new approaches. We must establish clear, progressive equipment requirements so that industry will supply not what the Russians have, the Air Force or the Navy has, we already have, or it is willing to give, but instead *what we need.* This technology—based on *what we need* —is the only kind that will win.

The opinions expressed in this article are those of the authors and do not necessarily reflect official thinking of the Infantry School.

Capt Winfield A. Holt, who is a graduate of the United States Military Academy, attended the Associate Infantry Company Officer Course and Airborne and Ranger Schools at Fort Benning. He served three years with the 8th Cavalry, 1st Cavalry Division in Japan, first as a platoon leader, then as assistant S3 and company commander. In 1956 he was assigned as company commander with the 101st Airborne Division. He is now assistant editor of *Infantry*.

Sp4 Howard R. Webber graduated from Dartmouth College as Phi Beta Kappa and Summa Cum Laude. He took graduate studies at Lehigh University where he taught English until 1957, when he entered the Army. Specialist Webber received basic training at Fort Dix and Armor training at Fort Benning. He was later assigned to the staff of *Infantry* and is now assistant editor. He is the author of a number of nationally published poems.

An Equitable
ENLISTED PR

by Lt Walter F. Wilm

Recommendation by the unit commander . . .

THE NEED for a highly professional noncommissioned officer has become more obvious in view of the decreasing size of our Army and our increasing requirements for technically trained men. The enactment of the recent pay bill and the adoption of proficiency pay places a greater responsibility on commanders to promote only the best men. In the 1st Battle Group, 9th (Manchu) Infantry, the requirement for a more equitable promotion system was recognized.

Search for such a system required a great deal of research. We found, first of all, that methods used by many Army units, though they vary in details, generally follow a similar pattern. The pattern includes a recommendation from the unit commander, evaluation by a board of officers, and finally, selection and promotion. This system is better than none at all but, in our opinion, there is room for improvement.

We therefore initiated a study of differing methods for promotion followed in other Army units, as well as of the systems used by the Air Force and Navy. The promotion system used by the 20th Infantry in Panama seemed to provide the best framework for our program. With the results of this study, we formulated a program to achieve the following objectives: (1) To improve the selection of noncommissioned officers for promotion as recommended by paragraph 9c of AR 624–200; (2) To permit the new Department of the Army program of enlisted MOS-proficiency and leadership-performance tests to be phased into our system; (3) To encourage soldiers to earn faster promotion by self-study and application; (4) To enhance the morale, efficiency, quality and prestige of noncommissioned officers by selecting the "best qualified" for promotion and letting each soldier know where he stands on the Promotion Eligibility List; (5) To improve the status of training and develop unit *esprit* through the leadership of an outstanding corps of noncommissioned officers; (6) To reduce delinquencies.

The broad concept of our plan envisions that promotions to E5, E6 and E7 will be made from a Battle Group Promotion Eligibility List established for each MOS career field. Standing on the Promotion Eligibility List is based on: (1) Recommendation by the unit commander; (2) An examination in general military knowledge; (3) An examination in a specific MOS; (4) An interview by a Noncommissioned Officer Advisory Council; (5) Credit for length of service, time in grade, combat decorations and awards.

PROMOTION SYSTEM

Does your organization have a comprehensive promotion policy that is fair to all? Here is one that can pay dividends in NCO prestige, and in unit esprit and efficiency.

Allocation of quotas is prorated among the various career fields, with precedence given to those fields having the lowest percentage of authorized personnel in the grade to be allocated. When vacancies occur from reductions, they are filled by personnel from the Promotion Eligibility List.

Now let's look at these five steps more closely and see how the details are worked out:

Step 1. Initially, an individual must be recommended for promotion by his unit commander. The commander may cancel his recommendation at any time if the individual fails to maintain an "Excellent" in conduct and efficiency. This authority to recommend promotions and to delete candidates from the Promotion Eligibility List always remains in the hands of the unit commander.

Step 2. The next step to promotion is to take the qualifying General Military Knowledge Test. All applicants regardless of MOS must take it. It consists of nine basic military subjects: CBR, Drill and Ceremonies, First Aid, Military Justice, Map Reading, Interior Guard, Military Courtesy, Code of Conduct and Geneva Convention. This is a written test consisting of 290 questions. It was produced and reviewed by a board of one officer and selected noncommissioned officers from the eight organic and attached units of the battle group.

An individual need only have 50 percent of the required time in grade (AR 624–200) before he can take the test. This increases the number of soldiers eligible to take the test and provides the company commander with a broader base from which to select the best qualified candidate.

Individuals reduced for misconduct are ineligible to take the test until they complete the time-in-grade requirements established by Army Regulations. A delinquency report disqualifies an individual from taking the test for a three-month period. This encourages soldiers to keep out of trouble and reduces the number of delinquency reports passing over the commander's desk.

References are provided for study and test dates are scheduled so that a minimum of two weeks' preparatory time is available to all applicants. One test failure results in a two-month ineligibility period. Each succeeding test failure requires an additional four-month waiting period. Passing scores for E5, E6 and E7 are

. . . a written test in general military knowledge . .

70, 75 and 80 percent respectively. The maximum weight of the test towards promotion is 100 points.

. . . a practical MOS examination . . .

Step 3. The third step is the taking of the MOS Test in the career field in which the applicant is seeking promotion. A test for each three-digit MOS was drafted, reviewed and finalized by officers and noncommissioned officers skilled in the appropriate career field. Tests for each skill-level were not initially developed. In lieu of such tests, successively higher scores were required for the E5, E6 and E7. However, some skill-level examinations were developed for those MOSs involving many diverse job qualifications.

A man must have the full time in grade as set forth by AR 624–200 to take the MOS Test. Waivers are granted for exceptionally meritorious individuals. The applicant must have passed the General Military Knowledge Test, be in a promotable status, and possess the proper MOS, to include the skill digit required for the grade to which promotion is being sought. Lists of study references for each MOS are provided. Passing scores, ineligibility periods for delinquency reports and test failures, conduct-efficiency ratings and the scheduling of test dates are the same as outlined above for the qualifying General Military Knowledge Test. The maximum weight of the MOS Test towards promotion is 100 points.

Step 4. Assuming an individual has satisfactorily passed the General Military Knowledge and Military Occupational Specialty Tests, he is now eligible to appear before the Battle Group Noncommissioned Officer Advisory Council. In the 9th Infantry Regiment, this council includes the battle group sergeant-major and the first sergeants of the organic and attached units. These key noncommissioned officers objectively question a candidate to discover his outstanding traits, accomplishments and limitations. The Advisory Council uses a letter written by Gen Bruce C. Clarke as a guide in questioning the applicant. This letter, addressed to all members of the 7th Army on 26 November 1956, lists 23 qualifications and attributes that should be considered in promoting noncommissioned officers.

The Advisory Council is composed of senior noncommissioned officers because they are well acquainted with the requirements and should help to determine who joins their ranks. Also,

. . . objective questioning by the NCO Advisory Council . . .

this enhances the prestige of the noncommissioned officer corps.

The maximum weight of the council evaluation towards promotion is 100 points.

Step 5. After an individual has appeared before the Battle Group Advisory Council his personnel records are checked for three items. The first item, the length of active Federal service, is worth one point per month. The second, time in grade, is valued at two points per month; and the third, combat decorations and awards, ranges from five points for the Combat Infantry Badge to 25 points for the Medal of Honor.

The points earned in Steps 2 through 5 are totaled. This gives the soldier a numerical grade and determines his standing on the Battle Group Promotion Eligibility List which is published monthly.

. . . a records check . . .

The 1st Battle Group, 9th Infantry, feels that this system has definite advantages over one in which selection is made by a board of officers. Some commanders may feel that it is too cumbersome and will produce many administrative headaches, but this is not so. It was found that once preparation of the various tests was completed, one officer could handle the whole program in addition to his other duties.

There are similarities between this system and the Enlisted Evaluation System announced by the Department of the Army. One of the features of the Army's system will be a uniform procedure for determining promotion in the same grade, MOS and skill-level on a world-wide basis in the achievement of a Promotion Qualification Score. This score will be related to the promotion of enlisted personnel as appropriate. Commanders will then be able to select per-

sonnel for promotion from among those who meet all the eligibility requirements. Full implementation of this program will not be achieved for some time. However, the program we have developed can be used both during and after the interim period when Department of the Army will be phasing in this system.

Once the Department of the Army system is fully implemented, units undoubtedly will have more personnel eligible for promotion than can actually be promoted. Commanders will still have the problem of screening personnel. The program outlined here will simplify this problem. By substituting the Department of the Army promotion eligibility score for Steps 3 and 5, commanders can easily develop a promotion eligibility list utilizing Steps 1, 2, and 4 as a basis for a new integrated promotion score.

. . . and the top man is promoted.

Since the 1st Battle Group's system has had a favorable impact on training, and is, in effect, a training test, the S3 has been made responsible for the preparation, conduct and scoring of all examinations. The program has encouraged self-study and has materially raised the over-all training level of the battle group's noncommissioned officers.

The program also has contributed to a steady decline in delinquencies and it has enhanced morale by eliminating "gripes" found under the old board system. Each man knows where he stands on the Promotion Eligibility List and how he got there. Finally, from the viewpoint of the battle group commander, the test scores have revealed both weaknesses and strengths in the over-all training program.

The commander should be concerned with the following qualifications and attributes when considering a man for promotion.

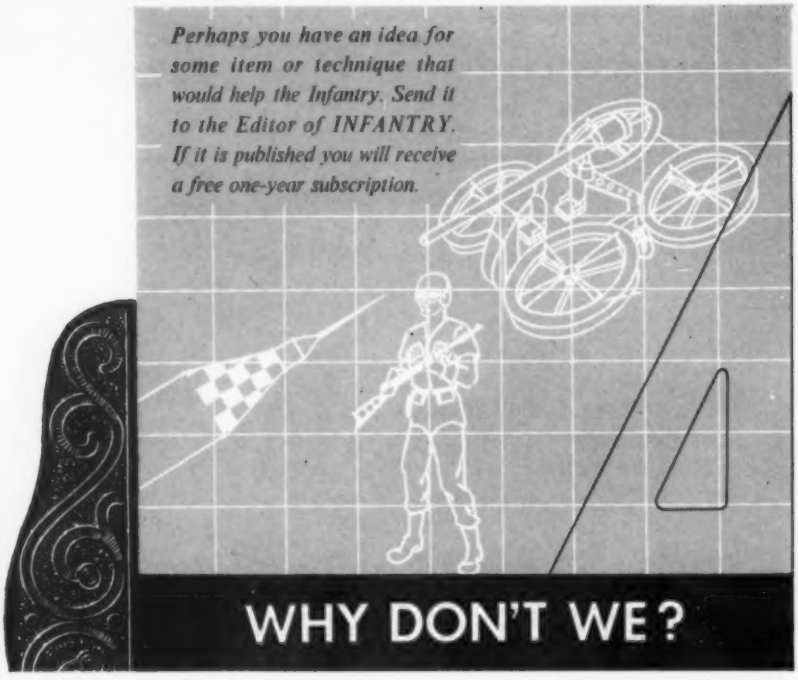
(1) Reliability.
(2) His knowledge of his present job and his preparation for the next higher one.
(3) Leadership: Can he direct men?
(4) Ability to organize and manage a job.
(5) Knowledge to detect, and courage to correct, errors in subordinates.
(6) Initiative: Does he perform well without close supervision?
(7) Appearance; military courtesy; neatness.
(8) Attitude; loyalty; enthusiasm.
(9) Ability as an instructor.
(10) Participation in athletics.
(11) Does he use his off-time to improve himself?
(12) Is he a good soldier all the time?
(13) Is the job he is charged with being done better now than when he took it over?
(14) Judgment and common sense: A good scale of values.
(15) Ability to receive and carry out instructions.
(16) Has he been efficiently filling his grade position?
(17) Accident record.
(18) VD record.
(19) Incident record.
(20) AWOL and Article 15 record.

General Bruce C. Clarke's checklist for determining promotion potential.

It should be pointed out, however, that the system does not reduce selection to a mere matter of arithemetic. There are still factors which are not easy to evaluate. For example: Should an ex-Navy man who had a battleship blown out from under him receive more promotion points than an Artilleryman who supported front-line Infantry units during combat? Should a wearer of the Combat Infantry Badge receive more points than either of these men? The equitable awarding of stripes can only be obtained through careful consideration and detailed planning. It is worth the effort.

The 1st Battle Group's system has been in effect since April 1958. It is one of the principal factors in our over-all program aimed at developing the finest noncommissioned officers to be found in any battle group in the United States Army. We feel that it is helping us achieve that objective.

Lt Walter F. Wilm entered the Army in 1955. He graduated from OCS in 1956, and became Pioneer and ammunition platoon leader with the 9th Infantry in Alaska. In 1957, he was assigned to the 18th Engineer Company (Construction), Ladd Air Force Base, as platoon leader. He has recently completed an assignment as Assistant S3 of the 1st battle Group, 9th Infantry, Eielson Air Force Base.


Perhaps you have an idea for some item or technique that would help the Infantry. Send it to the Editor of INFANTRY. If it is published you will receive a free one-year subscription.
WHY DON'T WE?

. . . **manufacture reinforced fiberglass water and gasoline cans.** These would eliminate the current rust problem and give a sizeable decrease in weight with no reduction in strength, if properly designed. Repair would be simplified by the issuance of a repair kit to each unit. No special training is required to effect such repairs.

Capt Lee D. Ellis, Jr.

. . . **establish a Distinguished Infantry Badge.** This would set apart the experienced, professional Infantryman of very broad background from the holder of the Expert Infantryman Badge much as the Distinguished Marksman Badge sets the wearer apart from the soldier with qualification awards. For this purpose, not only is a new badge required, but the requirements for achievement must be broad as well as lofty. To earn the badge, the Infantryman would have to be Airborne- and Ranger-qualified, obtain a score of 350 on the physical fitness test and establish a higher degree of proficiency in common military subjects than is presently specified for the EIB.

These requirements are high enough to challenge Infantry's best, and to prevent the badge from becoming a common award.

As far as the badge itself is concerned, it would recognize and consolidate Infantry, Airborne and Ranger skills. As depicted, it could be worn on the pocket, as is the current General Staff identification badge.

It would be a real mark of distinction for a man of distinction—the distinguished Infantryman.

Capt Lewis R. Baumann

. . . **authorize a standard necktie clasp.** In most offices it is customary to remove the green or TW blouse while working. This reveals a variety of tie clasps depicting miniature aircraft, golf clubs, colorful sports cars, and what have you. While these secure the necktie, they hardly contribute to uniformity.

The U.S. Marine Corps has chosen the Marine emblem as a standard. For Army use, a practical clasp would consist of a simple bar upon which the insignia of rank or grade has been superimposed. This solution would alleviate the embarrassing situation created by not knowing a man's rank when his coat is removed.

Capt Larry S. Mickel

. . . **use a three-quarter ton ambulance-type vehicle for the net control station for each Infantry battle group.** Use of such a vehicle would allow the radio operators to "black out" the vehicle completely while allowing them sufficient light inside to speed operations. The use of a sealed vehicle of this type would also help to eliminate the problem of sound "leakage" when the operators are not wearing headsets. The advantages of a metal-covered vehicle during periods of inclement weather are obvious. The only reason for the use of the present ¾-ton radio vehicle is to allow the operators to lower the silhouette for camouflage purposes by removing the canvas top. Yet the top is seldom removed from radio vehicles, as the operators must work out of the elements for maximum efficiency.

The present 100 ampere generator system would work satisfactorily, but an additional direct-current generator is recommended to supply power for radio equipment. Separate storage batteries could also be provided, with a switching system to allow independent operation of the radio power-supply system (thus permitting the vehicle to be started if the radios are inadvertently allowed to drain one set of batteries). This separate system would allow gearing of the drive train so that the vehicle engine does not run at a high rpm with low load factor, and spark plug fouling and excessive engine wear are reduced. The auxiliary generator could also be used to charge Sniperscope batteries, power

battle group message-center cipher machines and for a variety of other purposes.

Capt Lee D. Ellis, Jr.

. . . **develop and issue an ear-plug receiver** for the AN/PRC–10 and AN/PRC–6 type radios. Many of the problems of communication stem from the difficulty operators have in keeping the receiver up to their ears. A simple ear-plug arrangement would allow the operator to monitor the net while moving, firing or using his hands for other duties. Many small commercial radios make use of the ear-plug receiver to afford privacy.

Lt Col James C. Wilkins

. . . **devise an electronic board** which, using standard symbols, represents battle situations on realistic terrain. Battle group commanders and their staffs could, by means of this "fighting machine," oppose each other in electronic warfare as challenging as actual battle. A random element—which might result in the unexpected loss of an S3 or a company commander—could be engineered into the device for the effect of the "fortunes of war." Every tactical factor which it is possible to isolate could be simulated by the machine. Decisions could be fed into it by the opposing sides, and the machine would create a continuing representation of battle.

Certain other factors, of course, would have to be introduced outside the field of electronics. The fatigue of battle upon the commanders could be injected through the use of noise devices and by keeping the participants awake for 24 hours before an electronic battle.

Such a machine would provide invaluable experience, and would develop and test capabilities of command.

Col James H. Hayes

ANSWERS TO INFANTRY QUIZ *(See page 23)*

Possible score 100 points. Expert 90-100, Sharpshooter 70-80, Marksman 50-60, Recruit 30-40 and Bolo 0-20. For a more detailed discussion of the answers check the references listed.

1.c. The backblast danger area of a 106mm rifle extends 130 feet to the rear. It is triangular in shape, with the apex at the breech of the weapon, and has a base of 150 feet. Blast can cause serious casualties in the first 80 feet. The danger in the final 50 feet is from flying debris. (Chap 6, Sec III, Par 83, FM 23–52, June 1958)

2. The Infantry division (ROCID) has a total of 50 aircraft—16 reconnaissance, fixed-wing L19s; 6 utility, fixed-wing L20s; 20 reconnaissance helicopters H13 or H23; and 8 utility helicopters H19. (TOE 7T, "Infantry Division (ROCID)," December 1956)

3.a. The ion chamber (IM–108), which reveals the presence of radiation, has recently been standardized. It replaces the AN/PDR–39 as the standard field survey instrument. The pocket dosimeter measures total exposure to radiation. The charger, radiac meter, is used to charge the pocket dosimeter. The G–M meter is used by Medical and Engineer personnel for the detection of very small amounts of radioactive materials in food or water. (Par 30, TOE 7–17C, and FM 21–40, November 1958)

4.c. Tight shot groups are an indication of mastery of fundamentals taught in preparatory marksmanship and 25-meter Trainfire I. Each soldier is required to fire a three-round shot group from each of the eight positions taught. Each group is marked "passed" or "failed" based on its size checked against a scoring template. (Chap 3, Par 22, FM 23–71, September 1957)

5.a. Pathfinders are specially selected and trained Army personnel whose primary mission is to aid in the navigation and control of Army aircraft. (App 5, Par 1, FM 57–35, June 1958)

6.a. The rapid rate will be used when the rate of fire for a caliber .30 machinegun is not specified in the fire command. (Chap 6, Sec V, Par 132d, FM 23–55, October 1955)

7.d. 1100 meters is the maximum setting on the rear sight of the machinegun, M60. Pilot models only were graduated to 1200 yards. (*Infantry*, p 83, October-December 1957)

8.b. The transport aviation unit representative will provide the supported ground unit commander with the exact allowable cargo load figures during the planning phase of the mission. Such variables as weather, temperature, elevation, wind, etc., preclude the possibility of providing a figure for the allowable cargo load that will remain constant. (App 2, Par 1b, FM 57–35, June 1958)

9.b. Incorrect sight alignment causes an error in the strike of the bullet which increases as the range to the target increases. An error in the placement of the front sight, providing sight alignment is correct, causes an error which is approximately the same for all ranges. (Chap 3, Par 10b, FM 23–71, September 1957)

10.c. The phase line keeps friendly attacking troops out of supporting fire beyond this line. The phase line should follow some terrain feature which is easily located on the ground at night. It is normally prescribed by the battle group commander and is not crossed without battle group authority. (Chap 2, Sec XI, Par 72h, Advance Sheet, Rifle Company, Infantry Division Battle Group) NOTE: Term "phase line" replaces term "limit of advance" per USAIS Position Paper, "Fire Coordination Measures," May 1958.

(Continued from page 38)

Centralization is the Answer

aviators called "dual proficiency." As described in AR 600–105, "Army Aviation Career Program," an aviator is required to maintain ground proficiency consistent with his nonrated contemporary.

The announced objective of "dual proficiency" is to "produce and develop qualified and experienced commissioned officers for the professional and technical phases of Army Aviation." Yet, it is true that an aviator entering the "best qualified" echelon of promotion *must* have a high degree of branch proficiency to compete with the non-rated officer whose entire time is spent in branch-material assignments.

During those periods when an aviator is on a ground assignment attempting to retain his branch proficiency, his flying proficiency will suffer, since in most cases he is able to accumulate only the minimum of 80 hours' flying time per year. Thus, the program defeats the first priority task for the aviator: achieving the maximum combat performance from his aircraft.

A recent survey of aviators at Fort Benning shows that 18 percent of the 150 aviators questioned had transferred, or intended to transfer, from the Infantry to the Transportation Corps. Aviators see in the Transportation Corps a unifying Chief and an opportunity for a full-time aviation job, with a wide variety of aviation assignments and command opportunities. Infantry pilots further note that TC is the procurement agency for Army Aviation, that Transportation Corps is authorized a larger percentage of field grade aviators than any of the combat arms, and that Transportation Corps assignment means an opportunity to fly large aircraft.

As a consequence, the Transportation Corps will become the "aviation branch" unless sweeping changes are made in the aviation organization.

Already the Transportation Corps' very strong hold on aviation has had some undesirable effects. Army Aviation has cost $900,000,000 in the last eight years, the majority of these funds going to procurement of "freighter" aircraft that are too large to be concealed in the combat zone and too expensive to be risked forward of the FEBA. The battle group has not one single aircraft.

Under a branch system, coordination of aircraft procurement by the Chief of Army Aviation would insure the necessary balance between heavy transport and frontline aircraft. Establishment of an aviation branch as a combat arm would further guarantee that development and procurement are consistent with Army Aviation's mission: "To augment the capability of the Army to conduct prompt and sustained combat, incident to operations on land."

Establishing an aviation branch, which is within the statutory authority of the Secretary of the Army, would provide a solution to the majority of growing pains now suffered by Army Aviation. It would involve major changes, and would encounter strong opposition as it has since 1954 when first recommended by Army Aviation representatives in the Department of the Army. This opposition has developed as a result of a fear that the Army Aviation Branch would develop an "Army Air Corps attitude," thus separating itself from the ground combat echelons of the Army, and on the other hand, that constituting an aviation branch would provided the Air Force with an argument for assimilating that organization into its structure.

The first of these fears stems from the historical background of military aviation. Now that the Air Force has assumed the strategic aviation roles, there is no reason to suppose that the proposed aviation branch would follow the example of the Army Air Corps, which grew to have missions so independent of the ground arms that it ceased to provide them with effective support. Army Aviation's mission is clear enough and the preexistence of the Air Force will effectively discourage any departure from it.

The fear of assimilation by the Air Force is also groundless. It need only be pointed out that the Air Force has constantly treated those missions now assigned Army Aviation as a thorn in its side. The use of supersonic aircraft in ground support roles indicates an apparent lack of interest in aviation aspects of the ground fight. The Army is now authorized by law to engage in aviation activities and a reorganization of Army Aviation in the interest of efficiency would be of no more concern to the Air Force than any other internal activity of the Army.

The Army Aviation Branch, although primarily a combat branch, would function as both an arm and a service, as for example does the Corps of Engineers. The responsibilities for

Capt Larry S. Mickel is a graduate of the United States Military Academy and holds an M.S. in Aeronautical Engineering from Georgia Tech. After attending Airborne School, he became a platoon leader in the 11th Airborne Division and, in Korea, a platoon leader and company commander with the 27th Infantry. In 1955 he was aide-de-camp to the commanding general of I Corps, and, back in CONUS, G2 for air and assistant secretary of the general staff with the XVIII Airborne Corps. A graduate of the USAIS Advanced Course, Captain Mickel is now a member of the Air Mobility Group of the Airborne-Air Mobility Department.

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Not Branch, but Balance

support he gets. Because aviation has itself an argument against branch. On the one hand, branch is predicated on the basis of use, and not equipment. That is why we did not create a separate missile branch, but integrated our new missiles within appropriate existing branches. We gave the missiles to the people who would use them. Similarly, we must give the aircraft to the people who will use them—Infantry, Artillery, or whatever, must have organic aircraft. On the other hand, aviation, if left to itself in a branch organization, would, precisely because of its difference, tend to acquire trappings of mystery and witchcraft which do not contribute to efficiency. Airplanes are in every sense "air vehicles," and there is nothing exotic about them. As "vehicles," they must be controlled by the user, the ground commander.

Furthermore, with the advent of the zero ground-pressure device, a separate aviation branch would not only be inadvisable, but impracticable. This piece of equipment, presently in the developmental stage, may soon be as common as the jeep is now. Plainly enough, the logical direction of Army Aviation is not towards more sophisticated aircraft but towards equipment which is easy to operate, simple to maintain and economical to produce—and which, moreover, will be available and appropriate for sustained tactical use on an unprecedented scale. We must not allow branch proponents to imprison Army Aviation within the 1959–1960 time frame, for branch and AV are incompatible. Imagine, for example, how absurd it would be to talk about a "jeep branch," and yet branch exponents are in effect talking about the same kind of thing. When zero ground pressure vehicles are a dime a dozen, then obviously the domain of the air must be common to all branches.

If officers continue to pilot Army aircraft, the branch concept would also create prohibitive personnel difficulties. The role of Army Aviation is so defined by law and convention that though at the lower echelons a considerable number of personnel are required, at the higher echelons of command and on staff levels there simply would be no room for placement within a branch. Even now, field-grade, air-qualified officers must be employed in other duties than Army Aviation. When expanded aviation requires expanded numbers of lieutenants and captains as pilots of light aircraft, then high-level command room will be even scarcer. A profusion of AVs would complicate the problem, and adding branch on top of these elements would create an inoperable system.

Frequent assignment of Army Aviation personnel of one branch to air support duties with another has already taken its toll in efficiency of operation and good personnel management. Infantry officers who should be flying with Infantry units are flying with separate Artillery battalions, and Artillery officers are flying for Infantry battle groups. Situations like this contribute to a lack of effective support. If, however, an aviation branch were adopted, it is likely that aviation personnel would become even more disoriented. Whereas there is at the present time some incidence of branch uniformity between aviator and supported ground forces, under the branch concept, of course, there would be none.

Perhaps one of the most compelling considerations acting against the branch concept is also one of the least mentioned. The fact is that the country simply cannot afford a fourth air force. The Army doesn't need, doesn't want a "private" air force. We don't feel possessive about aerial warfare. What we do want is an Army air that will help us to do the Army job. What we need is an integrated air capability that allows an Army which is thinking in three dimensions to act in three dimensions—to perform its unique Army missions. For the Army's sake, as well as the country's, we need organic air and not a separate branch.

Nevertheless, problems do exist in Army Aviation and, if an aviation branch is no answer to them, neither is the preservation of the status quo. But a separate aviation branch is by no means the only alternative. There are certain logical revisions of the present aviation program which would solve these problems without creating new ones.

Generally speaking, Army Aviation grew in response to short-range necessity rather than long-range planning. It is not surprising, then, that the program is out of joint and has major defects, and that rather sweeping changes are indicated.

Among these is a concentration of budgetary responsibility in an overall aviation authority. The Director

Capt Roger M. Pezzelle was graduated from OCS in 1943. He served with the 197th Infantry Battalion, and then went to Italy with the 473d Infantry. Returning to CONUS, he became an OCS tactical officer. In 1948 he was again assigned to Italy, this time with the 351st Infantry. He then attended the Airborne and Jumpmaster Courses, afterwards serving with the 505th Infantry. Joining the 10th Special Forces Group, he accompanied that organization to Germany. In 1958 he completed the USAIS Advanced Course and began his present assignment in the School's Combat Developments Office. He recently was selected for admittance to USACGSC.

(Continued from page 70)

Centralization is the Answer

development, procurement, organization, maintenance and training would then logically come under one office for direction and coordination, the office of the Chief of Aviation. Aviation units would be assigned within the combat arms and technical services as required. Here they would respond to operational requirements of the ground commander under the same command relationship as found between the Infantry division and the Infantry division engineer battalion.

Many advantages would accrue from an aviation branch. These include: central control of responsibilities for aviation, centralization of career management for Army aviators, elimination of the need for "dual proficiency," elimination of the present "struggle for power" between the branches, and provision of a basis for rapid mobilization expansion. Further, an aviation branch would insure that proper recognition is given to the growth of all Army Aviation functions.

The Army must recognize that Army Aviation is a full-time profession. As a corollary, the Army must also recognize that a properly developed and vigorously executed school, unit and combined arms training program is the surest means of achieving effective, integrated performance of aviation and combat arms on the battlefield. The Infantry and other combat arms must finally recognize that the ultimate organization for Army Aviation is an aviation branch—a combat arm and service so organized that it centralizes all aviation effort now fractionalized between seven arms and services.

Army Aviation has come to have a variety of roles, some of them conflicting. To fulfill them efficiently under all conditions, Army air must be balanced and adaptable. An aviation branch is the best and most equitable way of insuring that we give every role the emphasis it requires, that we develop the equipment needed to fulfill each role in the best manner possible, and that we make maximum use of Army's aviation potential.

The opinions expressed in this article are those of the author and do not necessarily reflect official thinking of the Infantry School.

(Continued from page 71)

Not Branch, but Balance

of Army Aviation should, in coordination with using branches, be given research, procurement and doctrine responsibility for Army Aviation. In this way, the requirements which ground forces have for air support would be developed by air personnel, adjusted by ground personnel and supervised within a single framework of control. The Chief of Transportation would in this case no longer have total responsibility for aircraft procurement, and equipment design would be equitably coordinated among all the users. The ground forces would obtain a direct, balanced voice in Army Aviation. No longer would there exist the unfortunate situation which has Infantrymen operating on the FEBA in aircraft better suited to carry bulky cargo in rear areas. No longer would essential reconnaissance wait upon complicated maintenance. No longer would aircraft arrive too late to carry too little too short a distance. Aviation would be what it has not yet been—and would not be under the branch concept—*Army* Aviation.

In addition, Army Aviation should be completely integrated within the combat arms and services in supports. Only in this way will we forestall the fascination with branch, with pooling and with centralized control of operations—and, more important, only in this way will we remove once and for all the "borrower basis" on which field commanders must operate at this time. Pooling of aircraft at higher and higher levels may, indeed, decrease maintenance problems. I suggest that this decrease occurs partially because pooled aircraft are less frequently used than they would be were they organic. But the point to remember is that fewer maintenance problems must not become an end in itself. We are not primarily concerned with increasing maintenance ease, but with providing effective support. And organic aircraft are the only ones that can give us effective support. In addition, while centralized control of administration and procurement is fine, when applied to operations centralization is distinctly harmful. We want equanimity, not unanimity, and there is a difference between the two.

One further alteration will solve what is among the most pressing difficulties now facing Army Aviation: the "dual proficiency" requirement. The whole dual proficiency problem arises from the fact that commissioned officers pilot Army aircraft, for dual proficiency itself is by no means an extraordinary requirement. The jeep driver is also a radio-telephone operator. The NCO tank commander combines the functions of a communicator, an Artilleryman and an Ordnance shop foreman. It is only because careers are at stake that dual proficiency in Army Aviation has assumed its present proportions, that there have come to be major personnel difficulties. Even though it may be unreasonable to require of the officer aviator a performance of competitive quality in two fields, the concept of dual proficiency in itself is not unreasonable.

The obvious solution, therefore, is to substitute for the officer aviator a noncommissioned officer aviator. After all, the tradition of the officer pilot is nothing but a vestige of the days of the leather helmet, the white scarf and Eddie Rickenbacker's Hat-in-the-Ring Squadron. We have demanded

—nd successfully—a high degree of tec nical competence from the modern NCO. There is no reason why we cannot apply the NCO technical potential to Army Aviation by assigning NCOs as aviators. In fact, the NCO is likely to develop a sustained excellence in the technical aspects of Army air which is beyond that allowed by the present system.

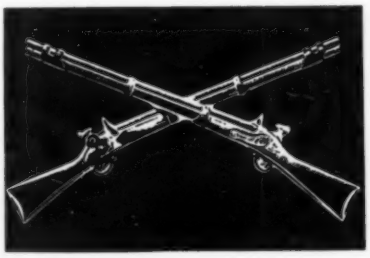
Actually, this transition from officer aviator to NCO aviator is not one of choice. The aerial vehicle—designed for operation by enlisted men—will unavoidably change the face of Army Aviation. Just as the AV invalidates the branch concept, it invalidates the commissioned pilot custom. With expanding Army Aviation, it is quite likely that, even disregarding the AV, we would soon need more pilots than our officer-procurement program could provide. Because Army Aviation will always have an auxiliary role, we cannot afford to divert to Army air sufficient resources to support a continuing officer-pilot program. Clearly, a change is in the offing. To prevent the lack of consistency and system which has sometimes characterized the development of Army Aviation in the past, we should accept the NCO pilot concept now, and we should begin a coordinated program of planning and training.

We can do this without wasting the valuable reservoir of knowledge and experience which is represented by officer pilots. This knowledge and experience would, in fact, be demanded by the type of aviation program described above. Aviation-trained officers would be used as "air officers" on the staffs of the units they supported. They would be used in research and development programs in the office of the Director of Army Aviation. They would be used as instructors in aviation-training. And, of course, they would be used to supervise, guide and direct the program as a whole.

If there is any impetus within the Army to extend Army Aviation into the area of legitimate Air Force operation, then it is not the result of Army ambition. We must not, however, seize upon the failure of the Air Force to provide the kind of support to which it is committed by law as an excuse for falling into the aviation branch trap. The branch concept promises a great deal, but in reality would operate with only the same efficiency—and sometimes with considerably less efficiency—than the present system.

What we really need is a sensible revision of this system, which creates an Army Aviation that is less than an air force or branch, but substantially more than an uncoordinated and unbalanced stepchild of necessity. Such a revision is the only way we will obtain practical responsiveness to the tactical commander's will, refinement of the equipment development process, effective use of personnel and an equitable emphasis within the Army on specific air functions.

The opinions expressed in this article are those of the author and do not necessarily reflect official thinking of the Infantry School.



BACK ISSUES OF INFANTRY AVAILABLE

The Book Department has a few back issues of *Infantry* which are available for $.25 each on a first-come-first-served basis. Three of these issues, July and October 1957 and January 1958, contain a total of more than 120 pages of valuable material on the ROCID organization.

Some issues have been completely sold out but small quantities of the following are available: April, July 1952; April July 1953; April 1954; April, July, October 1955; January, April, July and October 1956; July, October 1957; and January, April-June 1958.

Also available are a few copies of the first three large-format issues. These are available at $.50 per copy. If you are a new subscriber you will want these issues to complete your file of the new, larger *Infantry*.

WRITE: BOOK DEPARTMENT, UNITED STATES ARMY INFANTRY SCHOOL, FORT BENNING, GEORGIA

Lead Lines

INFANTRY needs — and has always welcomed — unsolicited manuscripts from the field. Unfortunately, however, many of the manuscripts we receive fail, for clear reasons not associated with grasp of subject matter or competence at expression, to meet *Infantry* requirements. Perhaps some of the manuscripts are too similar to others we have received or recently published. Perhaps they only cover certain aspects of a larger problem which *Infantry* must, for reasons of space economy, treat more completely or not at all. Perhaps they aim too high or too low. All of these deficiencies really result from the author's lack of information or orientation.

To avoid such errors many professional writers use the "query letter." They submit to the magazine of their choice an outline of a proposed article, together with two or three introductory paragraphs and an explanation of the purpose and scope of the article. The editor of the publication concerned can then provide guidance which will help the author avoid needless errors of the kind described. While editorial instructions, of course, do not indicate automatic acceptance for publication, chances of acceptance are materially increased simply because the author is able to write precisely what is needed.

From time to time *Infantry* will publish suggested titles or leadlines for articles which it feels are particularly appropriate. Why don't you query us about these and other subjects which you think would be of interest to *Infantry* readers.

Trainfire: A Reappraisal

The ROTC Program

Mobility in Nuclear Warfare: How Do We Get It Today?

Principles of War for the Junior Leader

Should Attendance at Army Schools be Purely on a Competitive Basis?

The Soldier's View of NATO

Army Sports Program—Its Value to the Average Soldier

Do the Combat Arms Get Their Fair Share of Civil Schooling Quotas?

Specialize or Generalize: Should Officers be Jacks of All Trades or Masters of One?

Is OCS Producing the Kind of Officer Needed Today?

LETTERS *(Continued from page 12)*

KUDOS

Sir:

My thanks to Col John Dibble, wherever he may be, for his article "Of Words and Weeds and Nice Clear Print" [July-September 1958 issue of *Infantry*] in which he explains the assistance available from the Magazine and Book Branch, Department of the army PIO.

Where the entry fee is only a four-cent stamp, I can be considered a big-time gambler, so I pulled from a dusty file my first and only attempt at fiction and fired it off.

For this effort I have recently received a check in five figures—including the cents—and some some very complimentary letters. Considering the current price of beans and shoes, it was most welcome.

I thought perhaps other readers with similar dusty files might like to know that following Colonel Dibble's suggestion pays off . . .

ROLFE L. HILLMAN, JR.
Maj, Infantry
Fort Benning, Ga.

Sir:

. . . You will be interested to know that *Infantry* has been our guide during the reorganization that was effective 15 February 1959. . . .

. . . through *Infantry* this brigade will be better organized and trained to take its place and form on the right flank with any organization.

L. H. JOHNSON, JR.
Lt Col, Infantry
Brigade Advisor
29th Infantry Brigade (Sep)
Fort Roger, Hawaii

Sir:

Congratulations on increasing the number of issues and I hope that in the future it will become a monthly magazine.

The way tactics and weapons are changing, plus the fact that new information is hard to get here in the reserves, your magazine has saved the day in quite a few discussions already.

JOHN F. KOROSEC
MSgt Army Reserve
Cleveland, Ohio
3d Battle Group, 83d Division

Collectors and Collections

Sir:

The Fort Leavenworth Museum is endeavoring to improve its collection of U.S. Army uniforms and uniform insignia and equipment, both enlisted and officer, in use from 1827 to 1920, in all branches of the Army.

The Museum welcomes gifts of uniform and equipment items in addition to donations of pioneer relics, small arms (1800 to date), and pictures, documents or other memorabilia of any period relating to the Fort or persons or groups associated with the Fort.

Gifts will be suitably acknowledged and credit will be given to the donor in the display of his gift. Correspondence and donations should be directed to:

CURATOR
Fort Leavenworth Museum
Fort Leavenworth, Kan.

Sir:

I am collecting unit distinctive insignia, battalion crests, regimental crests, etc., i.e. the uniform insignia worn on the shoulder loops of shirts or blouses. I shall be deeply indebted to any *Infantry* reader who will send me the insignia of his unit. Please include your name, unit designation and component. Duplicates I receive will be shared with anyone else collecting such items.

NELSON BORDEN
Lt, Armor
Nebraska National Guard
Auburn, Neb.

WHAT'S NEW FOR INFANTRYMEN

Changes • New Developments • Items of Specific or General Interest to Infantrymen

M17 Gas Mask

The canisterless M17 gas mask developed by the Army Chemical Corps has been adopted as a standard item of issue. Affording protection against chemical and biological agents, and against radiological particles, the mask has lower breathing resistance, and affords superior vision and better speech transmission. Pliable pads of a newly developed lightweight filter material are enclosed in cavities molded into the rubber facepiece of the mask, and the canister is thereby eliminated.

The new M17 marks the first significant change in gas masks since 1947, when the side-canister M9 was adopted. The M17 will considerably simplify supply and stock problems, since it will not require the M9's full assortment of sizes in both left- and right-handed facepieces. M17 deliveries are expected to begin in the spring of 1960.

Plastic Bone "Glue"

A plastic glue designed to "repair" damaged bones and put a patient back on his feet in 48 hours has been developed by the Army Medical Service. This project is of particular importance to the Army since at least 60 percent of combat injuries consist of bone fractures.

The substance, a polyurethane foam, is applied by opening the break or fracture site and "glueing" the bones together again. Over a period of several months the body completely replaces the plastic with natural bone.

The polyurethane can also be used in the place of bone fragments, and in this case would be molded by the surgeon to match original bone contours.

Experiments continue to determine the long-range effects of the substance on the body.

Miniaturization

Development of an electric light slightly larger than a pinhead and a radio transmitter the size of a pencil eraser has been announced by Department of the Army.

The lamp, one-tenth of an inch long and three-hundredths of an inch in diameter, may be used for dial-lighting, in medical endoscopes, in industrial probes and in optical systems requiring a near-point source of light.

The transmitter is used in ballistic studies to transmit back to ground receivers the temperature of an artillery shell in flight. Other applications are being considered.

Surface-to-air missile launcher.

The Redeye

A surface-to-air shoulder-fired guided missile system called Redeye is now under development. It is designed to provide combat troops with the means to destroy low-flying strafing or bombing aircraft.

Redeye, effective against either jets or conventional aircraft, may be employed at altitudes and ranges commensurate with defense of field army positions. The weapons system is approximately four feet long, about three inches in diameter and weighs approximately 20 pounds. The launch tube serves as the shipping container for the missile.

The missile itself is a composite of propellant, high-explosive warhead and electronic guidance system. Both the missile and its launcher can be easily transported by one man across rugged terrain.

Radars Developed and Improved

The Silent Sentry AN/PPS–4 frontline radar has been transistorized and converted from generator-supply to battery-supply. These improvements contribute to a reduction in weight and noise, while enhancing portability.

The Silent Sentry translates movement of tanks, trucks and troops into characteristic sounds in the headset worn by the soldier operator. Using these "electronic ears," the operator is able to pick up and pinpoint the movement of targets up to three miles away.

In addition, the Army has developed a new, ultrasensitive frontline radar which can spot a rolling tank, truck or jeep up to ten miles away, or a crawling enemy soldier up to two miles away. This type of radar also produces characteristic headset tones as a target identification, but in addition it creates patterns on a radar scope which provide more precise information on target position and direction of movement.

This new set, the AN/TPS–25, scans a 30-degree sector. When the operator receives initial identification signals, he can narrow the beam and zero in on the target. A tiny indicator light mounted under a map of the area under surveillance shows the object's exact ground position.

The AN/TPS–25 will give the Army its first ground-to-ground radar which can detect moving targets at very long ranges.

Lacrosse forward command station.

Lacrosse Units

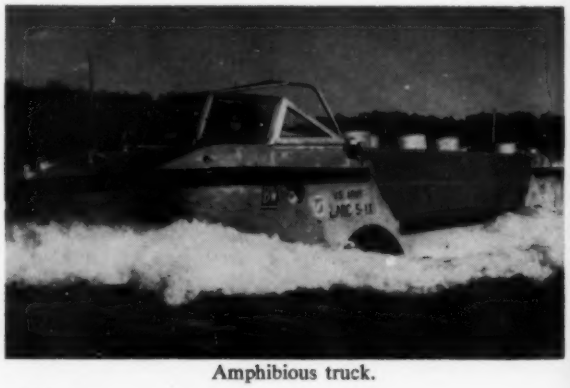
The Army's first Lacrosse missile battalion has received its equipment and a second Lacrosse battalion has been activated during ceremonies at Fort Sill.

The Lacrosse is the Army's surface-to-surface missile intended for close support in combat. It is a swept-fin, solid-propellant missile launched from a mobile launcher on a standard 2½-ton truck. It is guided to its target from a forward command station and has a nuclear and non-nuclear capability. The missile can be prepared for firing in a matter of minutes and is used to supplement tactical air or conventional artillery fire.

M151 truck.

Quarter-ton Truck

Deliveries of a new ¼-ton truck, designed to replace the jeep as the Army's tactical, utility and reconnaissance vehicle, will begin early next year. The M151 truck, lighter than the jeep, is air-droppable and features rugged construction, cross-country mobility, low fuel consumption and a high degree of economy in maintenance. Increased performance is provided by a new overhead-value engine and a new four-speed forward transmission.



Amphibious truck.

LARC–5

The Army's newest lightweight, highly mobile amphibian, the all-aluminum LARC–5 (lighter, amphibious, resupply, cargo) is undergoing tests at Fort Custer, Michigan.

Designed to replace the World War II DUKW, the LARC–5 is 35 feet long, 9 feet wide and is powered by a 270 horsepower engine. It has a water speed of approximately 10 mph and a land speed of between 30 and 35 mph. The LARC-5 has a five-ton load capacity.

Boomerang

Use of a small helicopter has been proposed as an anti-tank weapon. Called Boomerang, the device is actually a flying bomb which weighs about 70 pounds and is fitted with rotors approximately six feet long.

The Boomerang would be guided to its target by remote control and would employ an infrared homing device.

Missile-Support Vehicle

An experimental multi-purpose vehicle designed to reduce operating costs and simplify the handling of Army missile components at launching sites is now being evaluated for use at Nike installations.

Named the "Telefork," this new addition to the Army Quartermaster family of ground-support equipment for missiles serves as a forklift, a tractor and a crane. Developed originally as a rough-terrain forklift truck, the Telefork has a lifting capacity of 10,000 pounds, can pull 19,000 pounds and can hoist 10,000 pounds with its slewing crane boom.

Instructional Aids

Monthly List of Instructional Material

The *Monthly List*, an official publication of the Infantry School, is produced to facilitate the coordination of Infantry doctrine among Army service schools and to offer Infantry School instructional materials to Army agencies which conduct, support or monitor School-type instruction. The *Monthly List* is distributed under the provisions of USCONARC Memorandum Number 48, dated 14 October 1958, and each authorized addressee is furnished one gratuitous copy of any item listed which he specifically requests for official use.

Infantry reproduces items listed in current issues of the *List* as a reader service. Items which are preceded by an asterisk may be purchased from the Book Department, USAIS, Fort Benning, Ga., at the prices indicated, by anyone who is a member of the United States Armed Forces and who so states when ordering. The official military unit or agency address should be included with all such orders since franked mail cannot be sent to a private residence. If a personal address is given, the cost of postage must be enclosed with the order.

Items not marked with an asterisk are produced in limited quantities for resident instruction at the Infantry School and are not available for purchase. However, a unit or agency having a strong official need for any of these items may request a gratuitous copy from the Doctrine Publications Office, USAIS, Fort Benning, Ga. Such requests must state the purpose for which the material is needed and must include the official title and unit or agency address of the requester. Properly justified requests will be filled so long as the supply lasts.

***Infantry Reference Data.** A handbook containing charts, tables and diagrams of Infantry organization, and including pertinent reference data for Infantry commanders and staff sections. $1.20.

***Commander's Handbook for Preventive Maintenance.** A handbook outlining a course of instruction which will qualify Infantry commanders to plan, direct, control and evaluate results of inspections of motor vehicles, and providing reference material for personnel interested in improving their professional qualifications in motor vehicle maintenance and operation. $1.60.

***Operations and Training Handbook.** A handbook on operations and training including sections on organization, command and staff action, operations estimate, operation orders, overlay technique, troop movements, air-ground operations, training management, and records and reports. $2.25.

***Artillery Handbook.** Handbook on Field Artillery organization, characteristics of weapons, tactical employment, fire support planning and coordination, fire requests and adjustment of fire, and air defense artillery. 60¢

***Infantry Division Battle Group Organization Pamphlet.** A pamphlet on the organization of the Infantry division battle group including diagrams and general guidance data. 50¢.

***Infantry and Arborne Division Battle Groups,** 6020–A4, 6025–A2, 6035–A3. An instructional text covering Airborne and Infantry division battle groups, including organization, offense and defense, retrograde and breakout operations, airborne operations, fire support, task forces and troop leading procedures. $1.20.

106mm Rifle, M40A1, ST 7–178. A Special Text covering organization and crew drill, mechanical training, maintenance, fire control instruments, marksmanship and technique of fire.

Combat Intelligence, 6206–B3. A conference and practical exercise covering importance of combat intelligence in formulation of tactical decisions; analysis of weather and terrain; analysis of information on enemy strength, location and activity; handling of prisoners of war and correct intelligence reporting procedures.

Intelligence and Patrol Reporting, 6237–S2. A map exercise used in conjunction with training film and covering preparation of reconnaissance patrol reports.

March Planning, 6324–S3. A conference and practical exercise on planning daylight and night motor marches including planning of route reconnaissance and use of assembled data in preparation of strip maps.

Officer Efficiency Report, 6410–I2–USAR(RDT), two

hours. A conference and practical exercise on the purpose, use and format of officer efficiency reports.

Traffic Control, 6525–A1, USAR(RDT), one hour. A practical exercise covering highway traffic control plans and orders.

New Training Literature & Films

THE FOLLOWING manuals and training literature have recently been printed by Department of the Army and are available to instructors through normal supply channels.

Manuals

TC 20–1, Airmobile Operations (new).

ATP 7–12, Headquarters and Headquarters Company, Infantry Division Battle Group (new).

ATP 20–52, Headquarters and Headquarters Detachment, Replacement Group; Headquarters and Headquarters Detachment, Replacement Battalion; Replacement Company (new).

ATT 7–11, Airborne Division Battle Group (new).

ATT 7–168, Pathfinder Team (new).

ATT 57–1, Air Movement (new).

ASubjScd 7–11, Advanced Rifle Marksmanship (new).

ASubjScd 7–20, Rifle Squad Tactical Exercises (revision).

ASubjScd 7–40, Rifle Company Tactical Exercises (revision).

ASubjScd 7–52, Heavy-Drop Technques (revision).

ASubjScd 21–30, 3.5-inch Rocket Launcher, M20A1 and M20A1B1 (revision).

ASubjScd 21–34, Submachinegun, Caliber .45, M3 and M3A1.

ASubjScd 21–35, Machinegun, Caliber .30, M1919A4 and M1919A6.

ASubjScd 7–113.1, MOS Technical Training of Infantry Operations and Intelligence Specialist MOS 113.1 —Counterfire Specialist, Counterfire Computer, Counterfire Plotter.

The following manuals and training literature have been forwarded to Department of the Army for publication:

FM 7–24, Communication in Infantry and Airborne Divisions (revision).

FM 7–40, Infantry and Airborne Division Battle Groups (revision).

FM 21–5, Military Training (revision).

FM 23–43, 90mm, Full-Tracked, Self-Propelled Gun, M56 (new).

FM 57–21, Headquarters and Headquarters Company, Airborne Division Battle Group (new).

ATP 7–32, Headquarters and Headquarters Company, Airborne Division Battle Group (new).

ATP 7–52, Headquarters and Headquarters Company, Infantry Brigade, Separate (new).

ATP 57–6, Headquarters and Headquarters Company, Airborne Division Command and Control Battalion; Airborne Division Administrative Company (new).

ATT 7–2–1, Security Squad and Security Platoon, Headquarters and Headquarters Company, Infantry Division (TOE 7–2T) (new).

ATT 7–17, Rifle Company, Infantry and Airborne Division Battle Groups (new).

ATT 7–52, Security Platoon, Headquarters and Headquarters Company, Infantry Brigade, Separate (new).

ATT 57–6, Security Platoon and Band, Headquarters and Headquarters Company, Airborne Division Command and Control Batallion (new).

ASubjScd 7–7, 81mm Mortar Squad Tactical Training (revision).

ASubjScd 7–8, 106mm Recoilless Rifle Squad Tactical Training (revision).

ASubjScd 7–15, 106mm Rifle, M40A1 (revision).

ASubjScd 7–17, 81mm Mortar, M29 (revision).

ASubjScd 7–18, Flame Warfare, Flame Thrower, M2A1 (revision).

ASubjScd 7–19, Sniperscope and Other Infrared Equipment (revision).

ASubjScd 7–30, Rifle Platoon Tactical Exercises (revision).

ASubjScd 7–51, Airborne Proficiency (revision).

ASubjScd 7–53, Drop Zone Assembly (revision).

ASubjScd 21–29, Hand and Rifle Grenades (revision).

ASubjScd 21–31, U.S. Rifle, Caliber .30, M1 (revision).

ASubjScd 21–32, Carbine, Caliber .30, M1, M1A1, M2 and M3 (revision).

ASubjScd 21–36, Technique of Rifle Fire and Combat Firing (new).

ASubjScd 22–1, Basic Leadership Training, The Leader's Course (new).

The following field manuals and other training texts are being written or rewritten. Publication may be expected later this year, or during 1960.

FM 7–10, Rifle Company, Infantry and Airborne Division Battle Groups (revision).

FM 7–21, Headquarters and Headquarters Company, Infantry Division Battle Group (revision).

FM 7–( ), Combat Support Company, Infantry Division Battle Group (new).

FM 20–( ), Military Dog Training and Employment (new).

FM 20–( ), Ground Flame Warfare (new).

FM 22–5, C1, Drill and Ceremonies (change).

FM 23–( ), U.S. Rifle, 7.62mm, M14 (new).

FM 23–5, C1, U.S. Rifle Caliber .30, M1 (change).

FM 23–15, C4, Browning Automatic Rifle, Caliber .30, M1918A2 (change).

FM 23–82, C1, 106mm Rifle, M40A1 (change).

FM 23–92, 4.2-inch Mortar, M2 (revision).

FM 31–50, Combat in Fortified Areas and Towns (revision).

FM 57–35, Army Transport Aviation, Combat Operations (revision).

TM 57–210 and **TM–210A,** Air Movement of Troops and Equipment (revision).

TC 7–( ), Functioning and Employment, Antipersonnel Weapon (CLAYMORE), M18 and T48E1 (new).

TC 57–( ), Pathfinder Techniques (new).

TC ( )–( ), DAVY CROCKETT Weapons Systems in the Infantry and Airborne Divisions (new).

ATP 7–2, C1, Headquarters and Headquarters Company and Administrative Company, Infantry Division (change).

ATP 7–12, Headquarters and Headquarters Company, Infantry Division Battle Group (revision).

ATP 7–19, Combat Support Company, Infantry Division Battle Group (new).

ATP 20–5, ATP for Field Exercises and Maneuvers (revision).

ATP 21–114, BCTP for Male Military Personnel without Prior Service (revision).

ATT 7–12, Headquarters and Headquarters Company, Infantry and Airborne Division Battle Groups (new).

ATT 7–33, S2 Section, Battle Group (TOE 7–12T ROCID) (revision).

ASubjScd, 7–1, Organization, Mission and Employment of Regiment (revision).

ASubjScd 7–3, Weapons Squad Tactical Training (revision).

ASubjScd 7–9, Patrolling (revision).

ASubjScd 7–21, Weapons Squad Tactical Exercises (revision).

ASubjScd 7–( ), Assault Gun Platoon Tactical Exercises (new).

ASubjScd 7–( ), 90mm Full-Tracked, Self-Propelled Gun, M56 (new).

ASubjScd ( )–( ), 4.2-Inch Mortar Qualification (revision).

ASubjScd 17–56, Tactical Exercises of 81mm Mortar Platoon (revision).

ASubjScd 21–2, Drill and Ceremonies (revision).

ASubjScd 21–5, Guard Duty (revision).

ASubjScd 21–14, Military Courtesy and Customs (revision).

ASubjScd 21–17, Inspections (revision).

ASubjScd 21–20, Individual Day and Night Training (revision).

ASubjScd 21–25, Rifle Squad Tactical Training (revision).

ASubjScd 21–26, Squad Patrolling (revision).

ASubjScd 21–( ), Physical Training (new).

The following manuals and training literature have been submitted to United States Continental Army Command for review and approval.

TC 23–( ), SS10 Guided Missile (Infantry and Armor Units) (new).

ATP 7–17, C1, Rifle Company, Infantry and Airborne Division Battle Group; Light Weapons Infantryman, Heavy Weapons Infantryman (change).

ATT 7–62, Headquarters and Headquarters Detach-

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ment, Band and Security Section, Infantry Division Trains and Infantry Division Band (new).

FM 21–20, C1, Physical Training (change).

FM 21–76, C1, Survival (change).

FM 23–30, Grenades and Pyrotechnics (revision).

TM 21–200, C1, Physical Conditioning (change).

Training Films

The following training films have been approved for release to requesting units:

CF 10–47, Inspection and Handling of Food at Mess Level, 24 minutes.

MF 3–9027, The CBR Story, 37 minutes.

MF 12–9026, 90 Day Wondering, 8 minutes.

MF 20–9040A, A Sharper Sword and a Stronger Shield, 43 minutes.

MF 45–9089, World War I—A Documentary of the Role of the U.S.A., 28 minutes.

MF 46–9029, Helicopter Arctic Operations, 29 minutes.

TF 7–2750, Troop Movement by Air, Air Force Aircraft, 24 minutes.

TF 7–2760, Range Management, 17 minutes.

TF 8–2713, Management of Mass Casualties—Part IX—Burns, 15 minutes.

TF 11–2755, Installation and Operation of Switchboard SB–22PT, 18 minutes.

TF 11–2756, Installation and Operation of Switchboard SB–86PT, 27 minutes.

TF 11–2764, Radio Relay Equipment AN/TRC–35 and 36, Part II—Tuning of the Transmitter, 30 minutes.

TF 11–2765, Radio Relay Equipment AN/TRC–35, Part III—Tuning of the Receiver, 15 minutes.

TF 11–2767, Radio Relay Equipment AN/TRC–35 and 36—Part V—Installation of Antenna System, 24 minutes.

TF 16–2742, Chastity, 8 minutes.

TF 19–2751, Military Prisoners—Part I—Duties of Guards within a Confinement Facility, 23 minutes.

TF 19–2752, Military Prisoners—Part II—Duties of Prisoner Guards outside a Confinement Facility, 19 minutes.

TF 19–2753, Military Prisoners—Part III—Movement of Military Prisoners, 20 minutes.

TF 20–2561, The Pentomic Army, 50 minutes.

TF 44–2610, Nike Hercules Sam Battalion—Part I—Emplacement of the Monorail Launcher, 19 minutes.

TF 44–2611, Nike Hercules Sam Battalion—Part III Preparation of the Monorail Launcher, 13 minutes.

TF 44–2612, Nike Hercules Sam Battalion Reload Procedures, 15 minutes.

TF 44–2613, Nike Hercules Sam Battalion, Battery Control Area, Emplacement and March Order of the Nike Acquisition Radar, 38 minutes.

TF 44–2625, Nike Radar Test Set—Part I—Preliminary Adjustments, 4 minutes.

TF 44–2626, Nike Radar Test Set—Part II—Measurement and Adjustment of Receiver Frequency and Sensitivity of Tracking Radars, 5 minutes.

TF 44–2627, Nike Radar Test Set—Part III—Measurement and Adjustment of Transmitter Frequency and Power of Tracking Radars, 3 minutes.

TF 44–2628, Nike System, Automatic Frequency Control Adjustment, 8 minutes.

TF 44–2630, Nike Ajax System, Tracking Radar, Range Unit Zero and Slope Adjustment, 4 minutes.

TF 44–2631, Nike System: Orientation and Synchronization, Tracking Radar Collimation, Data Dial Method, 6 minutes.

TF 44–2633, Nike Ajax Missile, Using UDMH as Starting Fluid, 6 minutes.

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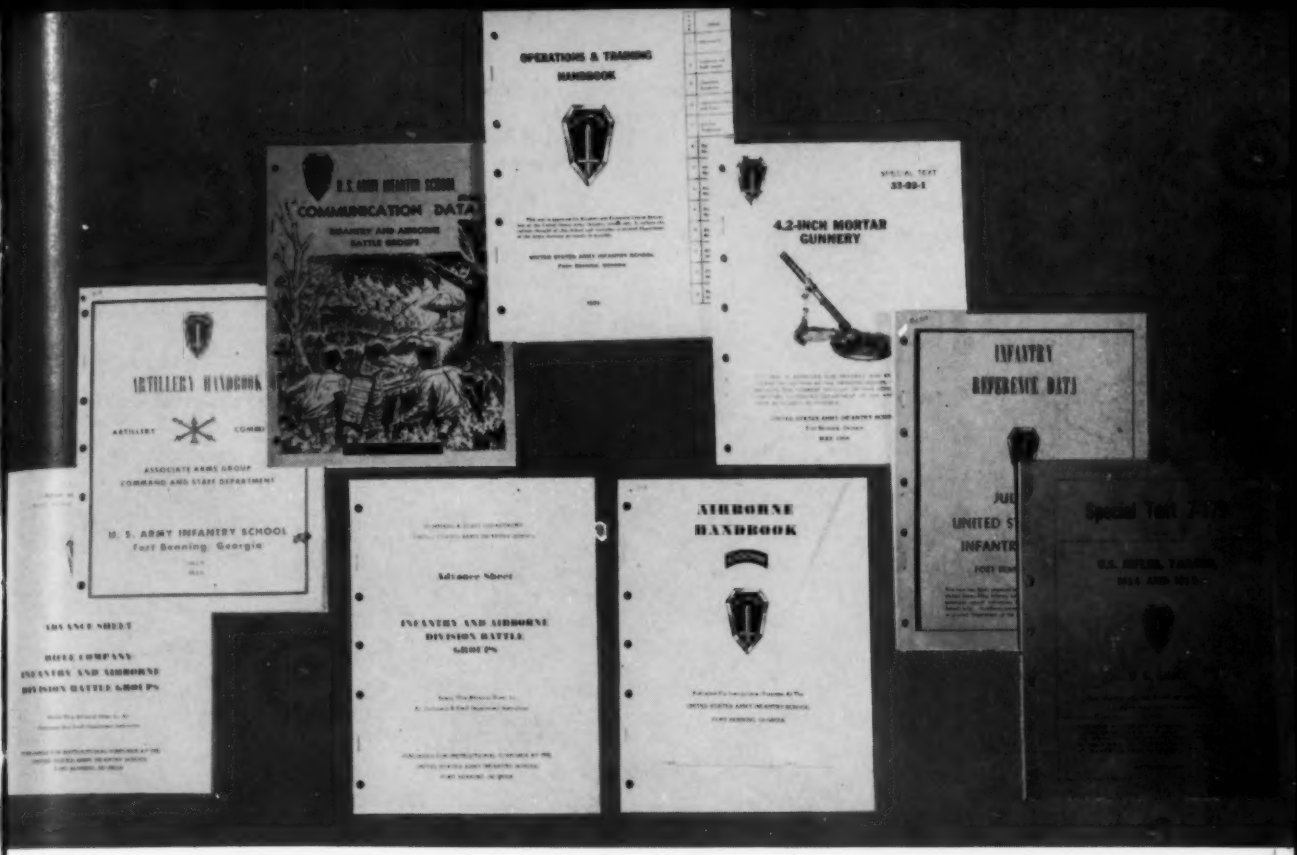

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IN FLANDERS FIELDS

In Flanders Fields the poppies blow
Between the crosses, row on row,
That mark our place; and in the sky
The larks, still bravely singing, fly
Scarce heard amid the guns below.

We are the Dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved and were loved, and now we lie
In Flanders fields.

Take up our quarrel with the foe:
To you from failing hands we throw
The torch; be yours to hold it high.
If ye break faith with us who die
We shall not sleep, though poppies grow
In Flanders fields.

John McCrae

VETERANS' DAY
November 11th